

LIST OF ANNEXES

ANNEX I	GENERAL PROVISIONS FOR ASSESSING SUBSTANCES AND PREPARING CHEMICAL SAFETY REPORTS.....	72
ANNEX II	GUIDE TO THE COMPILATION OF SAFETY DATA SHEETS	84
ANNEX III	CRITERIA FOR SUBSTANCES REGISTERED IN QUANTITIES BETWEEN 1 AND 10 TONNES.....	93
ANNEX IV	EXEMPTIONS FROM THE OBLIGATION TO REGISTER IN ACCORDANCE WITH ARTICLE 2(7)(a).....	94
ANNEX V	EXEMPTIONS FROM THE OBLIGATION TO REGISTER IN ACCORDANCE WITH ARTICLE 2(7)(b).....	98
ANNEX VI	INFORMATION REQUIREMENTS REFERRED TO IN ARTICLE 10.....	99
ANNEX VII	STANDARD INFORMATION REQUIREMENTS FOR SUBSTANCES MANUFACTURED OR IMPORTED IN QUANTITIES OF ONE TONNE OR MORE.....	103
ANNEX VIII	STANDARD INFORMATION REQUIREMENTS FOR SUBSTANCES MANUFACTURED OR IMPORTED IN QUANTITIES OF 10 TONNES OR MORE.....	107
ANNEX IX	STANDARD INFORMATION REQUIREMENTS FOR SUBSTANCES MANUFACTURED OR IMPORTED IN QUANTITIES OF 100 TONNES OR MORE.....	111
ANNEX X	STANDARD INFORMATION REQUIREMENTS FOR SUBSTANCES MANUFACTURED OR IMPORTED IN QUANTITIES OF 1 000 TONNES OR MORE.....	116
ANNEX XI	GENERAL RULES FOR ADAPTATION OF THE STANDARD TESTING REGIME SET OUT IN ANNEXES VII TO X.....	119
ANNEX XII	GENERAL PROVISIONS FOR DOWNSTREAM USERS TO ASSESS SUBSTANCES AND PREPARE CHEMICAL SAFETY REPORTS.....	122
ANNEX XIII	CRITERIA FOR THE IDENTIFICATION OF PERSISTENT, BIOACCUMULATIVE AND TOXIC SUBSTANCES, AND VERY PERSISTENT AND VERY BIOACCUMULATIVE SUBSTANCES	124
ANNEX XIV	LIST OF SUBSTANCES SUBJECT TO AUTHORISATION	125
ANNEX XV	DOSSIERS	126
ANNEX XVI	SOCIO-ECONOMIC ANALYSIS.....	128
ANNEX XVII	RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES	129

ANNEX I

GENERAL PROVISIONS FOR ASSESSING SUBSTANCES AND PREPARING CHEMICAL SAFETY REPORTS

0. INTRODUCTION

- 0.1. The purpose of this Annex is to set out how manufacturers and importers are to assess and document that the risks arising from the substance they manufacture or import are adequately controlled during manufacture and their own use(s) and that others further down the supply chain can adequately control the risks. This Annex shall also apply adapted as necessary to producers and importers of articles required to make a chemical safety assessment as part of a registration.
- 0.2. The chemical safety assessment shall be prepared by one or more competent person(s) who have appropriate experience and received appropriate training, including refresher training.
- 0.3. The chemical safety assessment of a manufacturer shall address the manufacture of a substance and all the identified uses. The chemical safety assessment of an importer shall address all identified uses. The chemical safety assessment shall consider the use of the substance on its own (including any major impurities and additives), in a preparation and in an article, as defined by the identified uses. The assessment shall consider all stages of the life-cycle of the substance resulting from the manufacture and identified uses. The chemical safety assessment shall be based on a comparison of the potential adverse effects of a substance with the known or reasonably foreseeable exposure of man and/or the environment to that substance taking into account implemented and recommended risk management measures and operational conditions.
- 0.4. Substances whose physicochemical, toxicological and ecotoxicological properties are likely to be similar or follow a regular pattern as a result of structural similarity may be considered as a group, or 'category' of substances. If the manufacturer or importer considers that the chemical safety assessment carried out for one substance is sufficient to assess and document that the risks arising from another substance or from a group or 'category' of substances are adequately controlled then he can use that chemical safety assessment for the other substance or group or 'category' of substances. The manufacturer or importer shall provide a justification for this.
- 0.5. The chemical safety assessment shall be based on the information on the substance contained in the technical dossier and on other available and relevant information. Manufacturers or importers submitting a proposal for testing in accordance with Annexes IX and X shall record this under the relevant heading of the chemical safety report. Available information from assessments carried out under other international and national programmes shall be included. Where available and appropriate, an assessment carried out under Community legislation (e.g. risk assessments completed under Regulation (EEC) No 793/93) shall be taken into account in the development of, and reflected in, the chemical safety report. Deviations from such assessments shall be justified.

Thus the information to be considered includes information related to the hazards of the substance, the exposure arising from the manufacture or import, the identified uses of the substance, operational conditions and risk management measures applied or recommended to downstream users to be taken into account.

In accordance with section 3 of Annex XI in some cases, it may not be necessary to generate missing information, because risk management measures and operational conditions which are necessary to control a well-characterised risk may also be sufficient to control other potential risks, which will not therefore need to be characterised precisely.

If the manufacturer or importer considers that further information is necessary for producing his chemical safety report and that this information can only be obtained by performing tests in accordance with Annex IX or X, he shall submit a proposal for a testing strategy, explaining why he considers that additional information is necessary and record this in the chemical safety report under the appropriate heading. While waiting for results of further testing, he shall record in his chemical safety report, and include in the exposure scenario developed, the interim risk management measures that he has put in place and those he recommends to downstream users intended to manage the risks being explored.

- 0.6. A chemical safety assessment performed by a manufacturer or an importer for a substance shall include the following steps in accordance with the respective sections of this Annex:
 1. Human health hazard assessment.
 2. Human health hazard assessment of physicochemical properties.

3. Environmental hazard assessment.
4. PBT and vPvB assessment.

If as a result of steps 1 to 4 the manufacturer or importer concludes that the substance or the preparation meets the criteria for classification as dangerous according to Directive 67/548/EEC or Directive 1999/45/EC or is assessed to be a PBT or vPvB, the chemical safety assessment shall also consider the following steps:

5. Exposure assessment
 - 5.1. The generation of exposure scenario(s) or the generation of relevant use and exposure categories if appropriate.
 - 5.2. Exposure estimation.
6. Risk characterisation

A summary of all the relevant information used in addressing the points above, shall be presented under the relevant heading of the Chemical Safety Report (Section 7).

- 0.7. The main element of the exposure part of the chemical safety report is the description of the exposure scenario(s) implemented for the manufacturer's production, the manufacturer or importer's own use, and those recommended by the manufacturer or importer to be implemented for the identified use(s).

An exposure scenario is the set of conditions that describe how the substance is manufactured or used during its life-cycle and how the manufacturer or importer controls, or recommends downstream users to control, exposures of humans and the environment. These sets of conditions contain a description of both the risk management measures and operational conditions which the manufacturer or importer has implemented or recommends to be implemented by downstream users.

If the substance is placed on the market, the relevant exposure scenario(s), including the risk management measures and operational conditions shall be included in an annex to the safety data sheet in accordance with Annex II.

- 0.8. The level of detail required in describing an exposure scenario will vary substantially from case to case, depending on the use of a substance, its hazardous properties and the amount of information available to the manufacturer or importer. Exposure scenarios may describe the appropriate risk management measures for several individual processes or uses of a substance. An exposure scenario may thereby cover a large range of processes or uses. Exposure scenarios covering a wide range of processes or uses may be referred to as Exposure Categories. Further mention of Exposure Scenario in this Annex and Annex II includes Exposure Categories if they are developed.
- 0.9. Where information is not necessary in accordance with Annex XI, this fact shall be stated under the appropriate heading of the chemical safety report and a reference shall be made to the justification in the technical dossier. The fact that no information is required shall also be stated in the safety data sheet.
- 0.10. In relation to particular effects, such as ozone depletion, photochemical ozone creation potential, strong odour and tainting, for which the procedures set out in Sections 1 to 6 are impracticable, the risks associated with such effects shall be assessed on a case-by-case basis and the manufacturer or importer shall include a full description and justification of such assessments in the chemical safety report and summarised in the safety data sheet.
- 0.11. When assessing the risk of the use of one or more substances incorporated into a special preparation (for instance alloys), the way the constituent substances are bonded in the chemical matrix shall be taken into account.
- 0.12. Where the methodology described in this Annex is not appropriate, details of alternative methodology used shall be explained and justified in the chemical safety report.

- 0.1.3. Part A of the chemical safety report shall include a declaration that the risk management measures outlined in the relevant exposure scenarios for the manufacturer's or importer's own use(s) are implemented by the manufacturer or importer and that those exposure scenarios for the identified uses are communicated to distributors and downstream users in the safety data sheet(s).

1. HUMAN HEALTH HAZARD ASSESSMENT

1.0. Introduction

- 1.0.1. The objective of the human health hazard assessment shall be:

- to determine the classification and labelling of a substance in accordance with Directive 67/548/EEC, and
- to derive levels of exposure to the substance above which humans should not be exposed. This level of exposure is known as the Derived No-Effect Level (DNEL).

- 1.0.2. The human health hazard assessment shall consider the toxicokinetic profile (i.e. absorption, metabolism, distribution and elimination) of the substance and the following groups of effects, (1) acute effects (acute toxicity, irritation and corrosivity), (2) sensitisation, (3) repeated dose toxicity and (4) CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction). Based on all the available information, other effects shall be considered when necessary.

- 1.0.3. The hazard assessment shall comprise the following four steps:

Step 1: Evaluation of non-human information.

Step 2: Evaluation of human information.

Step 3: Classification and Labelling.

Step 4: Derivation of DNELs.

- 1.0.4. The first three steps shall be undertaken for every effect for which information is available and shall be recorded under the relevant section of the Chemical Safety Report and where required and in accordance with Article 31, summarised in the Safety Data Sheet under headings 2 and 11.

- 1.0.5. For any effect for which no relevant information is available, the relevant section shall contain the sentence: 'This information is not available'. The justification, including reference to any literature search carried out, shall be included in the technical dossier.

- 1.0.6. Step 4 of the human health hazard assessment shall be undertaken by integrating the results from the first three steps and shall be included under the relevant heading of the Chemical Safety Report and summarised in the Safety Data Sheet under heading 8.1.

1.1. Step 1: Evaluation of non-human information

- 1.1.1. The evaluation of non-human information shall comprise:

- the hazard identification for the effect based on all available non-human information,
- the establishment of the quantitative dose (concentration)-response (effect) relationship.

- 1.1.2. When it is not possible to establish the quantitative dose (concentration)-response (effect) relationship, then this should be justified and a semi-quantitative or qualitative analysis shall be included. For instance, for acute effects it is usually not possible to establish the quantitative dose (concentration)-response (effect) relationship on the basis of the results of a test conducted in accordance with test methods laid down in a Commission Regulation as specified in Article 13(3). In such cases it suffices to determine whether and to which degree the substance has an inherent capacity to cause the effect.

- 1.1.3. All non-human information used to assess a particular effect on humans and to establish the dose (concentration)-response (effect) relationship, shall be briefly presented, if possible in the form of a table or tables, distinguishing between *in vitro*, *in vivo* and other information. The relevant test results (e.g. LD50, NO(A)EL or LO(A)EL) and test conditions (e.g. test duration, route of administration) and other relevant information shall be presented, in internationally recognised units of measurement for that effect.

1.1.4. If one study is available then a robust study summary should be prepared for that study. If there are several studies addressing the same effect, then, having taken into account possible variables (e.g. conduct, adequacy, relevance of test species, quality of results, etc.), normally the study or studies giving rise to the highest concern shall be used to establish the DNELs and a robust study summary shall be prepared for that study or studies and included as part of the technical dossier. Robust summaries will be required of all key data used in the hazard assessment. If the study or studies giving rise to the highest concern are not used, then this shall be fully justified and included as part of the technical dossier, not only for the study being used but also for all studies demonstrating a higher concern than the study being used. It is important irrespective of whether hazards have been identified or not that the validity of the study be considered.

1.2. Step 2: Evaluation of human information

If no human information is available, this part shall contain the statement: 'No human information is available'. However, if human information is available, it shall be presented, if possible in the form of a table.

1.3. Step 3: Classification and Labelling

1.3.1. The appropriate classification and labelling developed in accordance with the criteria in Directive 67/548/EEC shall be presented and justified. Where applicable Specific Concentration limits, resulting from the application of Article 4(4) of Directive 67/548/EEC and Articles 4 to 7 of Directive 1999/45/EC, shall be presented and, if they are not included in Annex I to Directive 67/548/EEC, justified. The assessment should always include a statement as to whether the substance fulfils or does not fulfil the criteria given in Directive 67/548/EEC for CMR, categories 1 and 2.

1.3.2. If the information is inadequate to decide whether a substance should be classified for a particular end-point, the registrant shall indicate and justify the action or decision he has taken as a result.

1.4. Step 4: Identification of DNEL(s)

1.4.1. Based on the outcomes of steps 1 and 2, (a) DNEL(s) shall be established for the substance, reflecting the likely route(s), duration and frequency of exposure. For some endpoints, especially mutagenicity and carcinogenicity, the available information may not enable a threshold, and therefore a DNEL, to be established. If justified by the exposure scenario(s), a single DNEL may be sufficient. However, taking into account the available information and the exposure scenario(s) in Section 9 of the Chemical Safety Report it may be necessary to identify different DNELs for each relevant human population (e.g. workers, consumers and humans liable to exposure indirectly via the environment) and possibly for certain vulnerable sub-populations (e.g. children, pregnant women) and for different routes of exposure. A full justification shall be given specifying, *inter alia*, the choice of the information used, the route of exposure (oral, dermal, inhalation) and the duration and frequency of exposure to the substance for which the DNEL is valid. If more than one route of exposure is likely to occur, then a DNEL shall be established for each route of exposure and for the exposure from all routes combined. When establishing the DNEL, the following factors shall, *inter alia*, be taken into account:

- (a) the uncertainty arising, among other factors, from the variability in the experimental information and from intra- and inter-species variation;
- (b) the nature and severity of the effect;
- (c) the sensitivity of the human (sub-)population to which the quantitative and/or qualitative information on exposure applies.

1.4.2. If it is not possible to identify a DNEL, then this shall be clearly stated and fully justified.

2. PHYSICOCHEMICAL HAZARD ASSESSMENT

2.1. The objective of the hazard assessment for physicochemical properties shall be to determine the classification and labelling of a substance in accordance with Directive 67/548/EEC.

2.2. As a minimum, the potential effects to human health shall be assessed for the following physicochemical properties:

- explosivity,
- flammability,
- oxidising potential.

If the information are inadequate to decide whether a substance should be classified for a particular end-point, the registrant shall indicate and justify the action or decision he has taken as a result.

- 2.3. The assessment of each effect shall be presented under the relevant heading of the Chemical Safety Report (Section 7) and where required and in accordance with Article 31, summarised in the Safety Data Sheet under headings 2 and 9.
- 2.4. For every physicochemical property, the assessment shall entail an evaluation of the inherent capacity of the substance to cause the effect resulting from the manufacture and identified uses.
- 2.5. The appropriate classification and labelling developed in accordance with the criteria in Directive 67/548/EEC shall be presented and justified.

3. ENVIRONMENTAL HAZARD ASSESSMENT

3.0. Introduction

- 3.0.1. The objective of the environmental hazard assessment shall be to determine the classification and labelling of a substance in accordance with Directive 67/548/EEC and to identify the concentration of the substance below which adverse effects in the environmental sphere of concern are not expected to occur. This concentration is known as the Predicted No-Effect Concentration (PNEC).
- 3.0.2. The environmental hazard assessment shall consider the potential effects on the environment, comprising the (1) aquatic (including sediment), (2) terrestrial and (3) atmospheric compartments, including the potential effects that may occur (4) via food-chain accumulation. In addition, the potential effects on the (5) microbiological activity of sewage treatment systems shall be considered. The assessment of the effects on each of these five environmental spheres shall be presented under the relevant heading of the Chemical Safety Report (Section 7) and where required and in accordance with Article 31, summarised in the Safety Data Sheet under headings 2 and 12.
- 3.0.3. For any environmental sphere, for which no effect information is available, the relevant section of the chemical safety report shall contain the sentence: 'This information is not available'. The justification, including reference to any literature research carried out, shall be included in the technical dossier. For any environmental sphere for which information is available, but the manufacturer or importer believes that it is not necessary to conduct the hazard assessment, the manufacturer or importer shall present a justification, with reference to pertinent information, under the relevant heading of the Chemical Safety Report (Section 7) and where required and in accordance with Article 31, summarised in the Safety Data Sheet under heading 12.
- 3.0.4. The hazard assessment shall comprise the following three steps, which shall be clearly identified as such in the Chemical Safety Report:

Step 1: Evaluation of information.

Step 2: Classification and Labelling.

Step 3: Derivation of the PNEC.

3.1. Step 1: Evaluation of information

- 3.1.1. The evaluation of all available information shall comprise:
 - the hazard identification based on all available information,
 - the establishment of the quantitative dose (concentration)-response (effect) relationship.
- 3.1.2. When it is not possible to establish the quantitative dose (concentration)-response (effect) relationship, then this should be justified and a semi-quantitative or qualitative analysis shall be included.
- 3.1.3. All information used to assess the effects on a specific environmental sphere shall be briefly presented, if possible in the form of a table or tables. The relevant test results (e.g. LC50 or NOEC) and test conditions (e.g. test duration, route of administration) and other relevant information shall be presented, in internationally recognised units of measurement for that effect.

- 3.1.4. All information used to assess the environmental fate of the substance shall be briefly presented, if possible in the form of a table or tables. The relevant test results and test conditions and other relevant information shall be presented, in internationally recognised units of measurement for that effect.
- 3.1.5. If one study is available then a robust study summary should be prepared for that study. Where there is more than one study addressing the same effect, then the study or studies giving rise to the highest concern shall be used to draw a conclusion and a robust study summary shall be prepared for that study or studies and included as part of the technical dossier. Robust summaries will be required of all key data used in the hazard assessment. If the study or studies giving rise to the highest concern are not used, then this shall be fully justified and included as part of the technical dossier, not only for the study being used but also for all studies reaching a higher concern than the study being used. For substances where all available studies indicate no hazards an overall assessment of the validity of all studies should be performed.

3.2. Step 2: Classification and Labelling

- 3.2.1. The appropriate classification and labelling developed in accordance with the criteria in Directive 67/548/EEC shall be presented and justified. Where applicable Specific Concentration limits, resulting from the application of Article 4(4) of Directive 67/548/EEC and Articles 4 to 7 of Directive 1999/45/EC, shall be presented and, if they are not included in Annex I to Directive 67/548/EEC, justified.
- 3.2.2. If the information are inadequate to decide whether a substance should be classified for a particular end-point, the registrant shall indicate and justify the action or decision he has taken as a result.

3.3. Step 3: Identification of the PNEC

- 3.3.1. Based on the available information, the PNEC for each environmental sphere shall be established. The PNEC may be calculated by applying an appropriate assessment factor to the effect values (e.g. LC50 or NOEC). An assessment factor expresses the difference between effects values derived for a limited number of species from laboratory tests and the PNEC for the environmental sphere (¹).
- 3.3.2. If it is not possible to derive the PNEC, then this shall be clearly stated and fully justified.

4. PBT AND VPVB ASSESSMENT

4.0. Introduction

- 4.0.1. The objective of the PBT and vPvB assessment shall be to determine if the substance fulfils the criteria given in Annex XIII and if so, to characterise the potential emissions of the substance. A hazard assessment in accordance with Sections 1 and 3 of this Annex addressing all the long-term effects and the estimation of the long-term exposure of humans and the environment as carried out in accordance with Section 5 (Exposure Assessment), step 2 (Exposure Estimation), cannot be carried out with sufficient reliability for substances satisfying the PBT and vPvB criteria in Annex XIII. Therefore, a separate PBT and vPvB assessment is required.
- 4.0.2. The PBT and vPvB assessment shall comprise the following two steps, which shall be clearly identified as such in Part B, Section 8 of the Chemical Safety Report:

Step 1: Comparison with the Criteria.

Step 2: Emission Characterisation.

The assessment shall also be summarised in the Safety Data Sheet under heading 12.

4.1. Step 1: Comparison with the Criteria

This part of the PBT and vPvB assessment shall entail the comparison of the available information, which is submitted as part of the technical dossier, with the criteria given in Annex XIII and a statement of whether the substance fulfils or does not fulfil the criteria.

If the available information is not sufficient to decide whether the substance fulfils the criteria in Annex XIII, then other evidence like monitoring data available for the registrant and giving rise to an equivalent level of concern shall be considered on a case-by-case basis.

⁽¹⁾ In general, the more extensive the data and the longer the duration of the tests, the smaller is the degree of uncertainty and the size of the assessment factor. An assessment factor of 1 000 is typically applied to the lowest of three short term L(E)C50 values derived from species representing different trophic levels and a factor of 10 to the lowest of three long-term NOEC values derived from species representing different trophic levels.

If the technical dossier contains for one or more endpoints only information as required in Annexes VII and VIII, the registrant shall consider information relevant for screening for P, B and T properties to decide whether further information needs to be generated to fulfil the objective of the PBT and vPvB assessment. In case the generation of further information is necessary and would require testing on vertebrate animals, the registrant shall submit a testing proposal. However, such further information does not need to be generated if the registrant implements or recommends sufficient risk management measures and operational conditions that enable derogation according to Section 3 of Annex XI from testing relevant for PBT and vPvB assessment.

4.2. Step 2: Emission Characterisation

If the substance fulfils the criteria an emission characterisation shall be conducted comprising the relevant parts of the exposure assessment as described in Section 5. In particular it shall contain an estimation of the amounts of the substance released to the different environmental compartments during all activities carried out by the manufacturer or importer and all identified uses, and an identification of the likely routes by which humans and the environment are exposed to the substance.

5. EXPOSURE ASSESSMENT

5.0. Introduction

The objective of the exposure assessment shall be to make a quantitative or qualitative estimate of the dose/concentration of the substance to which humans and the environment are or may be exposed. The assessment shall consider all stages of the life-cycle of the substance resulting from the manufacture and identified uses and shall cover any exposures that may relate to the hazards identified in Sections 1 to 4. The exposure assessment shall entail the following two steps, which shall be clearly identified as such in the Chemical Safety Report:

Step 1: Generation of exposure scenario(s) or the generation of relevant use and exposure categories.

Step 2: Exposure Estimation.

Where required and in accordance with Article 31, the exposure scenario shall also be included in an annex to the Safety Data Sheet.

5.1. Step 1: Development of exposure scenarios

- 5.1.1. Exposure scenarios as described in Sections 0.7 and 0.8 shall be generated. Exposure scenarios are the core of the process to carry out a chemical safety assessment. The chemical safety assessment process may be iterative. The first assessment will be based on the required minimum and all available hazard information and on the exposure estimation that corresponds to the initial assumptions about the operating conditions and risk management measures (an initial exposure scenario). If the initial assumptions lead to a risk characterisation indicating that risks to human health and the environment are not adequately controlled, then it is necessary to carry out an iterative process with amendment of one or a number of factors in hazard or exposure assessment with the aim to demonstrate adequate control. The refinement of hazard assessment may require generation of additional hazard information. The refinement of exposure assessment may involve appropriate alteration of the operational conditions or risk management measures in the exposure scenario or more precise exposure estimation. The exposure scenario, resulting from the final iteration (a final exposure scenario), shall be included in the chemical safety report and attached to the safety data sheet in accordance with Article 31.

The final exposure scenario shall be presented under the relevant heading of the chemical safety report, and included in an annex to the safety data sheet, using an appropriate short title giving a brief general description of the use, consistent with those given in Section 3.5 of Annex VI. Exposure scenarios shall cover any manufacture in the Community and all identified uses.

In particular, an exposure scenario includes, where relevant, a description of:

Operational conditions

- the processes involved, including the physical form in which the substance is manufactured, processed and/or used,
- the activities of workers related to the processes and the duration and frequency of their exposure to the substance,
- the activities of consumers and the duration and frequency of their exposure to the substance,

- the duration and frequency of emissions of the substance to the different environmental compartments and sewage treatment systems and the dilution in the receiving environmental compartment.

Risk management measures

- the risk management measures to reduce or avoid direct and indirect exposure of humans (including workers and consumers) and the different environmental compartments to the substance,
 - the waste management measures to reduce or avoid exposure of humans and the environment to the substance during waste disposal and/or recycling.
- 5.1.2. Where a manufacturer, importer or downstream user applies for an application for an authorisation for a specific use, exposure scenarios need only be developed for that use and the subsequent life-cycle steps.

5.2. Step 2: Exposure Estimation

5.2.1. The exposure shall be estimated for each exposure scenario developed and shall be presented under the relevant heading of the Chemical Safety Report and where required and in accordance with Article 31, summarised in an annex to the safety data sheet. The exposure estimation entails three elements: (1) emission estimation; (2) assessment of chemical fate and pathways; and (3) estimation of exposure levels.

5.2.2. The emission estimation shall consider the emissions during all relevant parts of the life-cycle of the substance resulting from the manufacture and each of the identified uses. The life-cycle stages resulting from the manufacture of the substance cover, where relevant, the waste stage. The life-cycle stages resulting from identified uses cover, where relevant, the service-life of articles and the waste stage. The emission estimation shall be performed under the assumption that the risk management measures and operational conditions described in the exposure scenario have been implemented.

5.2.3. A characterisation of possible degradation, transformation, or reaction processes and an estimation of environmental distribution and fate shall be performed.

5.2.4. An estimation of the exposure levels shall be performed for all human populations (workers, consumers and humans liable to exposure indirectly via the environment) and environmental spheres for which exposure to the substance is known or reasonably foreseeable. Each relevant route of human exposure (inhalation, oral, dermal and combined through all relevant routes and sources of exposure) shall be addressed. Such estimations shall take account of spatial and temporal variations in the exposure pattern. In particular, the exposure estimation shall take account of:

- adequately measured, representative exposure data,
- any major impurities and additives in the substance,
- the quantity in which the substance is produced and/or imported,
- the quantity for each identified use,
- implemented or recommended risk management, including the degree of containment,
- duration and frequency of exposure according to the operational conditions,
- the activities of workers related to the processes and the duration and frequency of their exposure to the substance,
- the activities of consumers and the duration and frequency of their exposure to the substance,
- the duration and frequency of emissions of the substance to the different environmental compartments and the dilution in the receiving environmental compartment,

- the physicochemical properties of the substance,
 - transformation and/or degradation products,
 - the likely routes of exposure of and potential for absorption in humans,
 - the likely pathways to the environment and environmental distribution and degradation and/or transformation (see also Section 3 Step 1),
 - scale (geographical) of exposure,
 - matrix dependent release/migration of the substance.
- 5.2.5. Where adequately measured representative exposure data are available, special consideration shall be given to them when conducting the exposure assessment. Appropriate models can be used for the estimation of exposure levels. Relevant monitoring data from substances with analogous use and exposure patterns or analogous properties can also be considered.

6. RISK CHARACTERISATION

- 6.1. The risk characterisation shall be carried out for each exposure scenario and shall be presented under the relevant heading of the Chemical Safety Report.
- 6.2. The risk characterisation shall consider the human populations (exposed as workers, consumers or indirectly via the environment and if relevant a combination thereof) and the environmental spheres for which exposure to the substance is known or reasonably foreseeable, under the assumption that the risk management measures described in the exposure scenarios in the Section 5 have been implemented. In addition, the overall environmental risk caused by the substance shall be reviewed by integrating the results for the overall releases, emissions and losses from all sources to all environmental compartments.
- 6.3. The risk characterisation consists of:
- a comparison of the exposure of each human population known to be or likely to be exposed with the appropriate DNEL,
 - a comparison of the predicted environmental concentrations in each environmental sphere with the PNECs, and
 - an assessment of the likelihood and severity of an event occurring due to the physicochemical properties of the substance.
- 6.4. For any exposure scenario, the risk to humans and the environment can be considered to be adequately controlled, throughout the lifecycle of the substance that results from manufacture or identified uses, if:
- the exposure levels estimated in Section 6.2 do not exceed the appropriate DNEL or the PNEC, as determined in Sections 1 and 3, respectively, and,
 - the likelihood and severity of an event occurring due to the physicochemical properties of the substance as determined in Section 2 is negligible.
- 6.5. For those human effects and those environmental spheres for which it was not possible to determine a DNEL or a PNEC, a qualitative assessment of the likelihood that effects are avoided when implementing the exposure scenario shall be carried out.

For substances satisfying the PBT and vPvB criteria, the manufacturer or importer shall use the information as obtained in Section 5, Step 2 when implementing on its site, and recommending for downstream users, risk management measures which minimise exposures and emissions to humans and the environment, throughout the lifecycle of the substance that results from manufacture or identified uses.

7. CHEMICAL SAFETY REPORT FORMAT

The Chemical Safety Report shall include the following headings:

CHEMICAL SAFETY REPORT FORMAT	
PART A	
1.	SUMMARY OF RISK MANAGEMENT MEASURES
2.	DECLARATION THAT RISK MANAGEMENT MEASURES ARE IMPLEMENTED
3.	DECLARATION THAT RISK MANAGEMENT MEASURES ARE COMMUNICATED
PART B	
1.	IDENTITY OF THE SUBSTANCE AND PHYSICAL AND CHEMICAL PROPERTIES
2.	MANUFACTURE AND USES
2.1.	Manufacture
2.2.	Identified uses
2.3.	Uses advised against
3.	CLASSIFICATION AND LABELLING
4.	ENVIRONMENTAL FATE PROPERTIES
4.1.	Degradation
4.2.	Environmental distribution
4.3.	Bioaccumulation
4.4.	Secondary poisoning
5.	HUMAN HEALTH HAZARD ASSESSMENT
5.1.	Toxicokinetics (absorption, metabolism, distribution and elimination)
5.2.	Acute toxicity
5.3.	Irritation
5.3.1.	Skin
5.3.2.	Eye
5.3.3.	Respiratory tract
5.4.	Corrosivity
5.5.	Sensitisation
5.5.1.	Skin
5.5.2.	Respiratory system
5.6.	Repeated dose toxicity
5.7.	Mutagenicity
5.8.	Carcinogenicity
5.9.	Toxicity for reproduction
5.9.1.	Effects on fertility
5.9.2.	Developmental toxicity
5.10.	Other effects
5.11.	Derivation of DNEL(s)

CHEMICAL SAFETY REPORT FORMAT

6. HUMAN HEALTH HAZARD ASSESSMENT OF PHYSICOCHEMICAL PROPERTIES

- 6.1. Explosivity
- 6.2. Flammability
- 6.3. Oxidising potential

7. ENVIRONMENTAL HAZARD ASSESSMENT

- 7.1. Aquatic compartment (including sediment)
- 7.2. Terrestrial compartment
- 7.3. Atmospheric compartment
- 7.4. Microbiological activity in sewage treatment systems

8. PBT AND VPVB ASSESSMENT

9. EXPOSURE ASSESSMENT

- 9.1. (Title of exposure scenario 1)
 - 9.1.1. Exposure scenario
 - 9.1.2. Exposure estimation
 - 9.2. (Title of exposure scenario 2)
 - 9.2.1. Exposure scenario
 - 9.2.2. Exposure estimation
- (etc.)

10. RISK CHARACTERISATION

- 10.1. (Title of exposure scenario 1)
 - 10.1.1. Human health
 - 10.1.1.1. Workers
 - 10.1.1.2. Consumers
 - 10.1.1.3. Indirect exposure to humans via the environment
 - 10.1.2. Environment
 - 10.1.2.1. Aquatic compartment (including sediment)
 - 10.1.2.2. Terrestrial compartment
 - 10.1.2.3. Atmospheric compartment
 - 10.1.2.4. Microbiological activity in sewage treatment systems
- 10.2. (Title of exposure scenario 2)
 - 10.2.1. Human health
 - 10.2.1.1. Workers
 - 10.2.1.2. Consumers
 - 10.2.1.3. Indirect exposure to humans via the environment

CHEMICAL SAFETY REPORT FORMAT

10.2.2. Environment

10.2.2.1. Aquatic compartment (including sediment)

10.2.2.2. Terrestrial compartment

10.2.2.3. Atmospheric compartment

10.2.2.4. Microbiological activity in sewage treatment systems

(etc.)

10.x. Overall exposure (combined for all relevant emission/release sources)

10.x.1. Human health (combined for all exposure routes)

10.x.1.1.

10.x.2. Environment (combined for all emission sources)

10.x.2.1.

ANNEX II

GUIDE TO THE COMPILATION OF SAFETY DATA SHEETS

This Annex sets out the requirements for a Safety Data Sheet that is provided for a substance or a preparation in accordance with Article 31. The Safety Data Sheet provides a mechanism for transmitting appropriate safety information on classified substances and preparations, including information from the relevant Chemical Safety Report(s) down the supply chain to the immediate downstream user(s). The information provided in the Safety Data Sheet shall be consistent with the information in the Chemical Safety Report, where one is required. Where a Chemical Safety Report has been performed, the relevant exposure scenario(s) shall be placed into an annex of the Safety Data Sheet, to make reference to them under the relevant headings of the Safety Data Sheet easier.

The purpose of this Annex is to ensure consistency and accuracy in the content of each of the mandatory headings listed in Article 31, so that the resulting Safety Data Sheets will enable users to take the necessary measures relating to protection of human health and safety at the workplace, and protection of the environment.

The information provided by Safety Data Sheets shall also meet the requirements set out in Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work. In particular, the Safety Data Sheet shall enable the employer to determine whether any hazardous chemical agents are present in the workplace, and to assess any risk to the health and safety of workers arising from their use.

The information in the Safety Data Sheet shall be written in a clear and concise manner. The Safety Data Sheet shall be prepared by a competent person who shall take into account the specific needs of the user audience, as far as it is known. Persons placing substances and preparations on the market shall ensure that competent persons have received appropriate training, including refresher training.

For preparations not classified as dangerous, but for which a Safety Data Sheet is required according to Article 31, proportionate information shall be provided under each heading.

Additional information may be necessary in some cases in view of the wide range of properties of the substances and preparations. If in other cases it emerges that information on certain properties is of no significance or that it is technically impossible to provide, the reasons for this shall be clearly stated under each heading. Information shall be provided for each hazardous property. If it is stated that a particular hazard does not apply, clearly differentiate between cases where no information is available to the classifier, and cases where negative test results are available.

Give the date of issue of the Safety Data Sheet on the first page. When a safety data sheet has been revised, the changes shall be brought to the attention of the recipient and identify it as 'Revision: (date)'.

Note

Safety data sheets are also required for certain special substances and preparations (e.g. metals in massive form, alloys, compressed gases, etc.) listed in chapters 8 and 9 of Annex VI to Directive 67/548/EEC, for which there are labelling derogations.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING**1.1. Identification of the substance or preparation**

The term used for identification shall be identical to that provided on the label as set out in Annex VI to Directive 67/548/EEC.

For substances subject to registration, the term shall be consistent with that provided under registration and the registration number assigned under Article 20(1) of this Regulation shall also be indicated.

Other means of identification available may also be indicated.

1.2. Use of the substance/preparation

Indicate the uses of the substance or preparation as far as they are known. Where there are many possible uses, only the most important or common uses need to be listed. This shall include a brief description of what it actually does, e.g. flame retardant, anti-oxidant, etc.

Where a Chemical Safety Report is required, the Safety Data Sheet shall contain information on all the identified uses relevant to the recipient of the Safety Data Sheet. This information shall be consistent with the identified uses and exposure scenarios set out in the annex to the Safety Data Sheet.

1.3. **Company/undertaking identification**

Identify the person responsible for placing the substance or preparation on the market within the Community, whether it is the manufacturer, importer or distributor. Give the full address and telephone number of this person as well as the e-mail address of the competent person responsible for the Safety Data Sheet.

In addition, where this person is not located in the Member State where the substance or preparation is placed on the market, give a full address and telephone number for the person responsible in that Member State, if possible.

For registrants, the person identified shall be consistent with the information on the identity of the manufacturer or importer provided in the registration.

1.4. **Emergency telephone**

In addition to the above mentioned information, supply the emergency telephone number of the company and/or relevant official advisory body (this may be the body responsible for receiving information relating to health, which is referred to in Article 17 of Directive 1999/45/EC). Specify if this phone number is available only during office hours.

2. HAZARDS IDENTIFICATION

Give here the classification of the substance or preparation which arises from application of the classification rules in Directives 67/548/EEC or 1999/45/EC. Indicate clearly and briefly the hazards the substance or preparation presents to man and the environment.

Distinguish clearly between preparations which are classified as dangerous and preparations which are not classified as dangerous according to Directive 1999/45/EC.

Describe the most important adverse physicochemical, human health and environmental effects and symptoms relating to the uses and possible misuses of the substance or preparation that can reasonably be foreseen.

It may be necessary to mention other hazards, such as dustiness, cross-sensitisation, suffocation, freezing, high potency for odour or taste or environmental effects such as hazards to soil-dwelling organisms, ozone depletion, photochemical ozone creation potential, etc., which do not result in classification but which may contribute to the overall hazards of the material.

The information shown on the label shall be given under heading 15.

The classification of the substance shall be consistent with the classification provided to the classification and labelling inventory according to Title XI.

3. COMPOSITION/INFORMATION ON INGREDIENTS

The information given shall enable the recipient to identify readily the hazards of the components of the preparation. The hazards of the preparation itself shall be given under heading 2.

3.1. It is not necessary to give the full composition (nature of the ingredients and their concentration), although a general description of the components and their concentrations can be helpful.

3.2. For a preparation classified as dangerous according to Directive 1999/45/EC, the following substances shall be indicated, together with their concentration or concentration range in the preparation:

(a) substances presenting a health or environmental hazard within the meaning of Directive 67/548/EEC, if they are present in concentrations equal to or greater than the lowest of:

— the applicable concentrations defined in the table of Article 3(3) of Directive 1999/45/EC, or

— the concentration limits given in Annex I to Directive 67/548/EEC, or

— the concentration limits given in Part B of Annex II to Directive 1999/45/EC, or

— the concentration limits given in Part B of Annex III Directive 1999/45/EC, or

— the concentration limits given in Annex V to Directive 1999/45/EC, or

— the concentration limits given in an agreed entry in the classification and labelling inventory established under Title XI of this Regulation;

- (b) substances for which there are Community workplace exposure limits, which are not already included under point (a);
- (c) substances that are persistent, bioaccumulative and toxic or very persistent and very bioaccumulative in accordance with the criteria set out in Annex XIII, if the concentration of an individual substance is equal to or greater than 0,1 %.
- 3.3. For a preparation not classified as dangerous according to Directive 1999/45/EC, the substances shall be indicated, together with their concentration or concentration range, if they are present in an individual concentration of either:
- (a) ≥ 1 % by weight for non-gaseous preparations and $\geq 0,2$ % by volume for gaseous preparations and
- the substances present a health or environmental hazard within the meaning of Directive 67/548/EEC ⁽¹⁾, or
 - the substances are assigned Community workplace exposure limits, or
- (b) $\geq 0,1$ % by weight and the substances are persistent, bioaccumulative and toxic or very persistent and very bioaccumulative in accordance with the criteria set out in Annex XIII.
- 3.4. The classification (derived either from Articles 4 and 6 of Directive 67/548/EEC, from Annex I to Directive 67/548/EEC or from an agreed entry in the classification and labelling inventory established under Title XI of this Regulation) of the above substances shall be given, including the symbol letters and R phrases which are assigned in accordance with their physicochemical, human health and environmental hazards. The R phrases do not need to be written out in full here: reference shall be made to heading 16, where the full text of each relevant R phrase shall be listed. If the substance does not meet the classification criteria, the reason for indicating the substance in section 3 shall be described, such as 'PBT-substance' or 'substance with a Community workplace exposure limit'.
- 3.5. The name and the Registration number, assigned under Article 20(1) of this Regulation, EINECS or ELINCS number, if available, of the above substances shall be given in accordance with Directive 67/548/EEC. The CAS number and IUPAC name (if available) may also be helpful. For substances listed by a generic name, according to Article 15 of Directive 1999/45/EC or the footnote to Section 3.3 of this Annex, a precise chemical identifier is not necessary.
- 3.6. If, in accordance with the provisions of Article 15 of Directive 1999/45/EC or the footnote to Section 3.3 of this Annex, the identity of certain substances is to be kept confidential, their chemical nature shall be described in order to ensure safe handling. The name used shall be the same as that which derives from the above procedures.

4. FIRST AID MEASURES

Describe the first-aid measures.

Specify first whether immediate medical attention is required.

The information on first aid shall be brief and easy to understand by the victim, bystanders and first-aiders. The symptoms and effects shall be briefly summarised. The instructions shall indicate what is to be done on the spot in the case of an accident and whether delayed effects can be expected after exposure.

Subdivide the information according to the different routes of exposure, i.e. inhalation, skin and eye contact and ingestion, under different subheadings.

Indicate whether professional assistance by a doctor is needed or advisable.

For some substances or preparations it may be important to emphasise that special means to provide specific and immediate treatment shall be available at the workplace.

5. FIRE-FIGHTING MEASURES

Refer to requirements for fighting a fire caused by the substance or preparation, or arising in its vicinity by indicating:

— suitable extinguishing media,

⁽¹⁾ Where the person responsible for placing the preparation on the market can demonstrate that the disclosure in the safety data sheet of the chemical identity of a substance which is exclusively classified as irritant with the exception of those assigned R41 or irritant in combination with one or more of the properties mentioned in point 2.3.4 of Article 10 of Directive 1999/45/EC, or harmful or harmful in combination with one or more of the properties mentioned in point 2.3.4 of Article 10 of Directive 1999/45/EC presenting acute lethal effects alone, will put at risk the confidential nature of his intellectual property, he may, in accordance with the provisions of Part B of Annex VI to Directive 1999/45/EC, refer to that substance either by means of a name that identifies the most important functional chemical groups, or by means of an alternative name.

- extinguishing media which shall not be used for safety reasons,
- special exposure hazards arising from the substance or preparation itself, combustion products, resulting gases,
- special protective equipment for fire-fighters.

6. ACCIDENTAL RELEASE MEASURES

Depending on the substance or preparation involved, information may be needed on:

personal precautions such as:

- removal of ignition sources, provision for sufficient ventilation/respiratory protection, control of dust, prevention of skin and eye contact,

environmental precautions such as:

- keeping away from drains, surface- and ground-water and soil, possible need to alert the neighbourhood,

methods for cleaning up such as:

- use of absorbent material (e.g. sand, diatomaceous earth, acid binder, universal binder, sawdust, etc.), reduction of gases/fumes with water, dilution.

Also consider the need for indications such as: 'never use, neutralise with ...'.

Note

If appropriate refer to headings 8 and 13.

7. HANDLING AND STORAGE

Note

Information in this section shall relate to the protection of human health, safety and the environment. It shall assist the employer in devising suitable working procedures and organisational measures according to Article 5 of Directive 98/24/EC.

Where a chemical safety report or a registration is required, the information in this section shall be consistent with the information given, for the identified uses and exposure scenarios set out in the annex to the Safety Data Sheet.

7.1. Handling

Specify precautions for safe handling including advice on technical measures such as:

- containment, local and general ventilation, measures to prevent aerosol and dust generation and fire, measures required to protect the environment (e.g. use of filters or scrubbers on exhaust ventilation, use in a bunded area, measures for collection and disposal of spillages, etc.) and any specific requirements or rules relating to the substance or preparation (e.g. procedures or equipment which are prohibited or recommended) and if possible give a brief description.

7.2. Storage

Specify the conditions for safe storage such as:

- specific design for storage rooms or vessels (including retention walls and ventilation), incompatible materials, conditions of storage (temperature and humidity limit/range, light, inert gas, etc.) special electrical equipment and prevention of static electricity.

Give advice if relevant on quantity limits under storage conditions. In particular indicate any special requirements such as the type of material used in the packaging/containers of the substance or preparation.

7.3. Specific use(s)

For end products designed for specific use(s), recommendations shall refer to the identified use(s) and be detailed and operational. If possible, reference shall be made to industry- or sector-specific approved guidance.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Specify currently applicable specific control parameters including occupational exposure limit values and/or biological limit values. Values shall be given for the Member State where the substance or preparation is placed on the market. Give information on currently recommended monitoring procedures.

Where a Chemical Safety Report is required, the relevant DNELs and PNECs for the substance shall be given for the exposure scenarios set out in the annex to the Safety Data Sheet.

For preparations, it is useful to provide values for those constituent substances which are required to be listed in the Safety Data Sheet according to heading 3.

8.2. Exposure controls

For the purposes of this document exposure control means the full range of specific risk management measures to be taken during use in order to minimise worker and environmental exposure. Where a chemical safety report is required, a summary of the risk management measures shall be given in Section 8 of the Safety Data Sheet for the identified uses set out in the Safety Data Sheet.

8.2.1. Occupational exposure controls

This information will be taken into account by the employer in carrying out an assessment of risk to the health and safety of workers for the substance or preparation under Article 4 of Directive 98/24/EC, which requires, in the order of priority:

- design of appropriate work processes and engineering controls, the use of adequate equipment and materials,
- the application of collective protection measures at source, such as adequate ventilation and appropriate organisational measures, and
- where exposure cannot be prevented by other means the use of individual protection measures, such as personal protection equipment.

Therefore provide suitable and adequate information on these measures to enable a proper risk assessment to be carried out under Article 4 of Directive 98/24/EC. This information shall complement that already given under heading 7.1.

Where individual protection measures are needed, specify in detail which equipment will provide adequate and suitable protection. Take into account Council Directive 89/686/EEC of 21 December 1989 on the approximation of the laws of the Member States relating to personal protective equipment ⁽¹⁾ and make reference to the appropriate CEN standards:

(a) Respiratory protection

For dangerous gases, vapours or dust, specify the type of protective equipment to be used, such as:

- self contained breathing apparatus, adequate masks and filters.

(b) Hand protection

Specify clearly the type of gloves to be worn when handling the substance or preparation, including:

- the type of material,
- the breakthrough time of the glove material, with regard to the amount and duration of dermal exposure.

If necessary indicate any additional hand protection measures.

(c) Eye protection

Specify the type of eye protection equipment required such as:

- safety glasses, safety goggles, face shield.

(d) Skin protection

If it is necessary to protect a part of the body other than the hands, specify the type and quality of protection equipment required, such as:

- apron, boots and full protective suit.

If necessary, indicate any additional skin protection measures and specific hygiene measures.

⁽¹⁾ OJ L 399, 30.12.1989, p. 18. Directive as last amended by Regulation (EC) No 1882/2003.

8.2.2. *Environmental exposure controls*

Specify the information required by the employer to fulfil his commitments under Community environmental protection legislation.

Where a chemical safety report is required, a summary of the risk management measures that adequately control exposure of the environment to the substance shall be given for the exposure scenarios set out in the annex to the Safety Data Sheet.

9. PHYSICAL AND CHEMICAL PROPERTIES

To enable proper control measures to be taken, provide all relevant information on the substance or preparation, particularly the information listed under heading 9.2. The information in this section shall be consistent with the information provided in a registration where one is required.

9.1. **General information**

Appearance:

indicate the physical state (solid, liquid, gas) and the colour of the substance or preparation as supplied.

Odour:

if odour is perceptible, give a brief description of it.

9.2. **Important health, safety and environmental information**

pH:

indicate the pH of the substance or preparation as supplied or of an aqueous solution; in the latter case, indicate the concentration.

Boiling point/boiling range

Flash point

Flammability (solid, gas)

Explosive properties

Oxidising properties

Vapour pressure

Relative density

Solubility

Water solubility

Partition coefficient: n-octanol/water

Viscosity

Vapour density

Evaporation rate

9.3. **Other information**

Indicate other important safety parameters, such as miscibility, fat solubility (solvent — oil to be specified), conductivity, melting point/melting range, gas group (useful for Directive 94/9/EC of the European Parliament and the Council of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres ⁽¹⁾), auto-ignition temperature, etc.

Note 1

The above properties shall be determined in accordance with the specifications laid down in the Commission Regulation on testing methods referred to in Article 13(3) or any other comparable method.

Note 2

For preparations, information shall normally be given on the properties of the preparation itself. However, if it is stated that a particular hazard does not apply, clearly differentiate between cases where no information is available to the classifier, and cases where negative test results are available. If it is considered necessary to give information about the properties of individual components, please indicate clearly what the data refers to.

⁽¹⁾ OJ L 100, 19.4.1994, p. 1. Directive as amended by Regulation (EC) No 1882/2003.

10. STABILITY AND REACTIVITY

State the stability of the substance or preparation and the possibility of hazardous reactions occurring under certain conditions of use and also if released into the environment.

10.1. Conditions to avoid

List those conditions such as temperature, pressure, light, shock, etc., which may cause a dangerous reaction and if possible give a brief description.

10.2. Materials to avoid

List materials such as water, air, acids, bases, oxidising agents or any other specific substance which may cause a dangerous reaction and if possible give a brief description.

10.3. Hazardous decomposition products

List hazardous materials produced in dangerous amounts upon decomposition.

Note

Address specifically:

- the need for and the presence of stabilisers,
- the possibility of a hazardous exothermic reaction,
- safety significance, if any, of a change in physical appearance of the substance or preparation,
- hazardous decomposition products, if any, formed upon contact with water,
- possibility of degradation to unstable products.

11. TOXICOLOGICAL INFORMATION

This section deals with the need for a concise but complete and comprehensible description of the various toxicological (health) effects, which can arise if the user comes into contact with the substance or preparation.

The information shall include dangerous-to-health effects from exposure to the substance or preparation, based on the conclusion from, for example, test data and experience. The information shall also include, where appropriate, delayed, immediate and chronic effects from short- and long-term exposure such as sensitisation, narcosis, carcinogenicity, mutagenicity and reproductive toxicity (developmental toxicity and fertility). It shall also include information on the different routes of exposure (inhalation, ingestion, skin and eye contact), and describe the symptoms related to the physical, chemical and toxicological characteristics.

Taking account of the information already provided under heading 3, composition/information on ingredients, it may be necessary to make reference to specific health effects of certain substances in the preparation.

The information in this section shall be consistent with the information provided for in a registration where required and/or in a Chemical Safety Report where required and shall give information on the following groups of potential effects:

- toxicokinetics, metabolism and distribution,
- acute effects (acute toxicity, irritation and corrosivity),
- sensitisation,
- repeated dose toxicity, and
- CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction).

For substances subject to registration, summaries of the information derived from the application of Annexes VII to XI of this Regulation shall be given. The information shall also include the result of the comparison of the available data with the criteria given in Directive 67/548/EEC for CMR, categories 1 and 2, following paragraph 1.3.1 of Annex I of this Regulation.

12. ECOLOGICAL INFORMATION

Describe the possible effects, behaviour and environmental fate of the substance or preparation in air, water and/or soil. Where available, give relevant test data (e.g. LC50 fish \leq 1 mg/l).

The information in this section shall be consistent with the information provided for in a registration where required and/or in a Chemical Safety Report where required.

Describe the most important characteristics likely to have an effect on the environment owing to the nature of the substance or preparation and likely methods of use. Information of the same kind shall be supplied for dangerous products arising from the degradation of substances and preparations. This may include the following:

12.1. **Ecotoxicity**

This shall include relevant available data on aquatic toxicity, both acute and chronic for fish, crustaceans, algae and other aquatic plants. In addition, toxicity data on soil micro- and macro-organisms and other environmentally relevant organisms, such as birds, bees and plants, shall be included when available. Where the substance or preparation has inhibitory effects on the activity of micro-organisms, the possible impact on sewage treatment plants shall be mentioned.

For substances subject to registration, summaries of the information derived from the application of Annexes VII to XI shall be included.

12.2. **Mobility**

The potential of the substance or the appropriate constituents of a preparation ⁽¹⁾, if released to the environment, to transport to groundwater or far from the site of release.

Relevant data might include:

- known or predicted distribution to environmental compartments,
- surface tension,
- absorption/desorption.

For other physicochemical properties see heading 9.

12.3. **Persistence and degradability**

The potential of the substance or the appropriate constituents of a preparation ⁽¹⁾ to degrade in relevant environmental media, either through biodegradation or other processes such as oxidation or hydrolysis. Degradation half lives shall be quoted where available. The potential of the substance or appropriate constituents of a preparation ⁽¹⁾ to degrade in sewage treatment plants shall also be mentioned.

12.4. **Bioaccumulative potential**

The potential of the substance or the appropriate constituents of a preparation ⁽¹⁾ to accumulate in biota and, eventually, to pass through the food chain, with reference to the octanol-water partition coefficient (Kow) and bioconcentration factor (BCF), if available.

12.5. **Results of PBT assessment**

Where a Chemical Safety Report is required, the results of the PBT assessment as set in the Chemical Safety Report shall be given.

12.6. **Other adverse effects**

If available, include information on any other adverse effects on the environment, e.g. ozone depletion potential, photochemical ozone creation potential, endocrine disrupting potential and/or global warming potential.

Remarks

Ensure that information relevant to the environment is provided under other headings of the Safety Data Sheet, especially advice for controlled release, accidental release measures, transport and disposal considerations under headings 6, 7, 13, 14 and 15.

13. DISPOSAL CONSIDERATIONS

If the disposal of the substance or preparation (surplus or waste resulting from the foreseeable use) presents a danger, a description of these residues and information on their safe handling shall be given.

⁽¹⁾ This information cannot be given for the preparation because it is substance specific. It should therefore be given, where available and appropriate, for each constituent substance in the preparation which is required to be listed in the Safety Data Sheet according to the rules under Section 3 of this Annex.

Specify the appropriate methods of disposal of both the substance or preparation and any contaminated packaging (incineration, recycling, landfilling, etc.)

Where a Chemical Safety Report is required, the information on the waste management measures that adequately control exposure of humans and the environment to the substance shall be consistent with the exposure scenarios set out in the annex to the Safety Data Sheet.

Note

Refer to any relevant Community provisions relating to waste. In their absence, it is useful to remind the user that national or regional provisions may be in force.

14. TRANSPORT INFORMATION

Indicate any special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside his premises. Where relevant, provide information on the transport classification for each of the modal regulations: IMDG (sea), ADR (Council Directive 94/55/EC of 21 November 1994 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by road ⁽¹⁾), RID (Council Directive 96/49/EC of 23 July 1996 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by rail ⁽²⁾), ICAO/IATA (air). This might include *inter alia*:

- UN number,
- class,
- proper shipping name,
- packing group,
- marine pollutant,
- other applicable information.

15. REGULATORY INFORMATION

Indicate if a Chemical Safety Assessment has been carried out for the substance (or a substance in the preparation).

Give the health, safety and environmental information shown on the label according to Directives 67/548/EEC and 1999/45/EC.

If the substance or preparation covered by this safety data sheet is the subject of specific provisions in relation to protection of man or the environment at Community level (e.g. authorisations given under Title VII or restrictions under Title VIII) these provisions shall, as far as is possible, be stated.

Also mention, where possible, the national laws which implement these provisions and any other national measures that may be relevant.

16. OTHER INFORMATION

Indicate any other information which the supplier assesses as being of importance for the health and safety of the user and for the protection of the environment, for example:

- list of relevant R phrases. Write out the full text of any R phrases referred to under headings 2 and 3 of the Safety Data Sheet,
- training advice,
- recommended restrictions on use (i.e. non-statutory recommendations by supplier),
- further information (written references and/or technical contact point),
- sources of key data used to compile the Safety Data Sheet.

For a revised Safety Data Sheet, indicate clearly the information, which has been added, deleted or revised (unless this has been indicated elsewhere).

⁽¹⁾ OJ L 319, 12.12.1994, p. 7. Directive as last amended by Commission Directive 2004/111/EC (OJ L 365, 10.12.2004, p. 25).

⁽²⁾ OJ L 235, 17.9.1996, p. 25. Directive as last amended by Commission Directive 2004/110/EC (OJ L 365, 10.12.2004, p. 24).

ANNEX III

CRITERIA FOR SUBSTANCES REGISTERED IN QUANTITIES BETWEEN 1 AND 10 TONNES

Criteria for substances registered between 1 and 10 tonnes, with reference to Article 12(1)(a) and (b):

- (a) substances for which it is predicted (ie by the application of (Q)SARs or other evidence) that they are likely to meet the criteria for category 1 or 2 classification for carcinogenicity, mutagenicity or reproductive toxicity or the criteria in Annex XIII;
 - (b) substances:
 - (i) with dispersive or diffuse use(s) particularly where such substances are used in consumer preparations or incorporated into consumer articles; and
 - (ii) for which it is predicted (i.e. by application of (Q)SARs or other evidence) that they are likely to meet the classification criteria for any human health or environmental effects endpoints under Directive 67/548/EEC.
-

ANNEX IV

EXEMPTIONS FROM THE OBLIGATION TO REGISTER IN ACCORDANCE WITH ARTICLE 2(7)(a)

EINECS No	Name/group	CAS No
200-061-5	D-glucitol C ₆ H ₁₄ O ₆	50-70-4
200-066-2	Ascorbic acid C ₆ H ₈ O ₆	50-81-7
200-075-1	Glucose C ₆ H ₁₂ O ₆	50-99-7
200-294-2	L-lysine C ₆ H ₁₄ N ₂ O ₂	56-87-1
200-312-9	Palmitic acid, pure C ₁₆ H ₃₂ O ₂	57-10-3
200-313-4	Stearic acid, pure C ₁₈ H ₃₆ O ₂	57-11-4
200-334-9	Sucrose, pure C ₁₂ H ₂₂ O ₁₁	57-50-1
200-405-4	α-tocopheryl acetate C ₃₁ H ₅₂ O ₃	58-95-7
200-432-1	DL-methionine C ₅ H ₁₁ NO ₂ S	59-51-8
200-711-8	D-mannitol C ₆ H ₁₄ O ₆	69-65-8
201-771-8	1-sorbose C ₆ H ₁₂ O ₆	87-79-6
204-007-1	Oleic acid, pure C ₁₈ H ₃₄ O ₂	112-80-1
204-664-4	Glycerol stearate, pure C ₂₁ H ₄₂ O ₄	123-94-4
204-696-9	Carbon dioxide CO ₂	124-38-9
205-278-9	Calcium pantothenate, D-form C ₉ H ₁₇ NO _{5,1/2} Ca	137-08-6
205-582-1	Lauric acid, pure C ₁₂ H ₂₄ O ₂	143-07-7
205-590-5	Potassium oleate C ₁₈ H ₃₄ O ₂ K	143-18-0
205-756-7	DL-phenylalanine C ₉ H ₁₁ NO ₂	150-30-1
208-407-7	Sodium gluconate C ₆ H ₁₂ O ₇ .Na	527-07-1
212-490-5	Sodium stearate, pure C ₁₈ H ₃₆ O ₂ .Na	822-16-2
215-279-6	Limestone A noncombustible solid characteristic of sedimentary rock. It consists primarily of calcium carbonate	1317-65-3
215-665-4	Sorbitan oleate C ₂₄ H ₄₄ O ₆	1338-43-8
216-472-8	Calcium distearate, pure C ₁₈ H ₃₆ O _{2,1/2} Ca	1592-23-0
231-147-0	Argon Ar	7440-37-1
231-153-3	Carbon C	7440-44-0
231-783-9	Nitrogen N ₂	7727-37-9
231-791-2	Water, distilled, conductivity or of similar purity H ₂ O	7732-18-5
231-955-3	Graphite C	7782-42-5

EINECS No	Name/group	CAS No
232-273-9	Sunflower oil Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acids linoleic, and oleic. (<i>Helianthus annuus</i> , <i>Compositae</i>).	8001-21-6
232-274-4	Soybean oil Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acids linoleic, oleic, palmitic and stearic (<i>Soja hispida</i> , <i>Leguminosae</i>).	8001-22-7
232-276-5	Safflower oil Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acid linoleic (<i>Carthamus tinctorius</i> , <i>Compositae</i>).	8001-23-8
232-278-6	Linseed oil Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acids linoleic, linolenic and oleic (<i>Linum usitatissimum</i> , <i>Linaceae</i>).	8001-26-1
232-281-2	Corn oil Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acids linoleic, oleic, palmitic and stearic. (<i>Zea mays</i> , <i>Gramineae</i>).	8001-30-7
232-293-8	Castor Oil Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acid ricinoleic (<i>Ricinus communis</i> , <i>Euphorbiaceae</i>).	8001-79-4
232-299-0	Rape oil Extractives and their physically modified derivatives. It consists primarily of the glycerides of the fatty acids erucic, linoleic and oleic (<i>Brassica napus</i> , <i>Cruciferae</i>).	8002-13-9
232-307-2	Lecithins The complex combination of diglycerides of fatty acids linked to the choline ester of phosphoric acid.	8002-43-5
232-436-4	Syrups, hydrolyzed starch A complex combination obtained by the hydrolysis of cornstarch by the action of acids or enzymes. It consists primarily of d-glucose, maltose and maltodextrins.	8029-43-4
232-442-7	Tallow, hydrogenated	8030-12-4
232-675-4	Dextrin	9004-53-9
232-679-6	Starch High-polymeric carbohydrate material usually derived from cereal grains such as corn, wheat and sorghum, and from roots and tubers such as potatoes and tapioca. Includes starch which has been pre-gelatinised by heating in the presence of water.	9005-25-8
232-940-4	Maltodextrin	9050-36-6
234-328-2	Vitamin A	11103-57-4

EINECS No	Name/group	CAS No
238-976-7	Sodium D-gluconate C ₆ H ₁₂ O ₇ .xNa	14906-97-9
248-027-9	D-glucitol monostearate C ₂₄ H ₄₈ O ₇	26836-47-5
262-988-1	Fatty acids, coco, Me esters	61788-59-8
262-989-7	Fatty acids, tallow, Me esters	61788-61-2
263-060-9	Fatty acids, castor-oil	61789-44-4
263-129-3	Fatty acids, tallow	61790-37-2
265-995-8	Cellulose Pulp	65996-61-4
266-925-9	Fatty acids, C ₁₂₋₁₈ This substance is identified by SDA Substance Name: C ₁₂ -C ₁₈ <i>alkyl carboxylic acid</i> and SDA Reporting No: 16-005-00.	67701-01-3
266-928-5	Fatty acids C ₁₆₋₁₈ This substance is identified by SDA Substance Name: C ₁₆ -C ₁₈ <i>alkyl carboxylic acid</i> and SDA Reporting No: 19-005-00.	67701-03-5
266-929-0	Fatty acids, C ₈₋₁₈ and C ₁₈ -unsaturated This substance is identified by SDA Substance Name: C ₈ -C ₁₈ and C ₁₈ <i>unsaturated alkyl carboxylic acid</i> and SDA Reporting No: 01-005-00.	67701-05-7
266-930-6	Fatty acids, C ₁₄₋₁₈ and C ₁₆₋₁₈ -unsaturated This substance is identified by SDA Substance Name: C ₁₄ -C ₁₈ and C ₁₆ -C ₁₈ <i>unsaturated alkyl carboxylic acid</i> and SDA Reporting No: 04-005-00.	67701-06-8
266-932-7	Fatty acids, C ₁₆ -C ₁₈ and C ₁₈ -unsaturated This substance is identified by SDA Substance Name: C ₁₆ -C ₁₈ and C ₁₈ <i>unsaturated alkyl carboxylic acid</i> and SDA Reporting No: 11-005-00.	67701-08-0
266-948-4	Glycerides, C ₁₆₋₁₈ and C ₁₈ -unsaturated This substance is identified by SDA Substance Name: C ₁₆ -C ₁₈ and C ₁₈ <i>unsaturated trialkyl glyceride</i> and SDA Reporting No: 11-001-00.	67701-30-8
267-007-0	Fatty acids, C ₁₄₋₁₈ and C ₁₆₋₁₈ -unsaturated., Me esters This substance is identified by SDA Substance Name: C ₁₄ -C ₁₈ and C ₁₆ -C ₁₈ <i>unsaturated alkyl carboxylic acid methyl ester</i> and SDA Reporting No: 04-010-00.	67762-26-9
267-013-3	Fatty acids, C ₆₋₁₂ This substance is identified by SDA Substance Name: C ₆ -C ₁₂ <i>alkyl carboxylic acid</i> and SDA Reporting No: 13-005-00.	67762-36-1

EINECS No	Name/group	CAS No
268-099-5	Fatty acids, C ₁₄₋₂₂ and C ₁₆₋₂₂ unsaturated This substance is identified by SDA Substance Name: C ₁₄ -C ₂₂ and C ₁₆ -C ₂₂ <i>unsaturated alkyl carboxylic acid</i> and SDA Reporting No: 07-005-00.	68002-85-7
268-616-4	Syrups, corn, dehydrated	68131-37-3
269-657-0	Fatty acids, soya	68308-53-2
269-658-6	Glycerides, tallow mono-, di- and tri-, hydrogenated	68308-54-3
270-298-7	Fatty acids, C ₁₄₋₂₂	68424-37-3
270-304-8	Fatty acids, linseed-oil	68424-45-3
270-312-1	Glycerides, C ₁₆₋₁₈ and C ₁₈ -unsaturated. mono- and di- This substance is identified by SDA Substance Name: C ₁₆ -C ₁₈ <i>and C₁₈ unsaturated alkyl and C₁₆-C₁₈ and C₁₈ unsaturated dialkyl glyceride</i> and SDA Reporting No: 11-002-00.	68424-61-3
288-123-8	Glycerides, C ₁₀₋₁₈	85665-33-4
292-771-7	Fatty acids, C ₁₂₋₁₄	90990-10-6
292-776-4	Fatty acids, C ₁₂₋₁₈ and C ₁₈ -unsaturated	90990-15-1
296-916-5	Fatty acids, rape-oil, erucic acid-low	93165-31-2

ANNEX V

EXEMPTIONS FROM THE OBLIGATION TO REGISTER IN ACCORDANCE WITH ARTICLE 2(7)(b)

1. Substances which result from a chemical reaction that occurs incidental to exposure of another substance or article to environmental factors such as air, moisture, microbial organisms or sunlight.
 2. Substances which result from a chemical reaction that occurs incidental to storage of another substance, preparation or article.
 3. Substances which result from a chemical reaction occurring upon end use of other substances, preparations or articles and which are not themselves manufactured, imported or placed on the market.
 4. Substances which are not themselves manufactured, imported or placed on the market and which result from a chemical reaction that occurs when:
 - (a) a stabiliser, colorant, flavouring agent, antioxidant, filler, solvent, carrier, surfactant, plasticiser, corrosion inhibitor, antifoamer or defoamer, dispersant, precipitation inhibitor, desiccant, binder, emulsifier, de-emulsifier, dewatering agent, agglomerating agent, adhesion promoter, flow modifier, pH neutraliser, sequesterant, coagulant, flocculant, fire retardant, lubricant, chelating agent, or quality control reagent functions as intended; or
 - (b) a substance solely intended to provide a specific physicochemical characteristic functions as intended.
 5. By-products, unless they are imported or placed on the market themselves.
 6. Hydrates of a substance or hydrated ions, formed by association of a substance with water, provided that the substance has been registered by the manufacturer or importer using this exemption.
 7. The following substances which occur in nature, if they are not chemically modified:
minerals, ores, ore concentrates, cement clinker, natural gas, liquefied petroleum gas, natural gas condensate, process gases and components thereof, crude oil, coal, coke.
 8. Substances occurring in nature other than those listed under paragraph 7, if they are not chemically modified, unless they meet the criteria for classification as dangerous according to Directive 67/548/EEC.
 9. Basic elemental substances for which hazards and risks are already well known:
hydrogen, oxygen, noble gases (argon, helium, neon, xenon), nitrogen.
-

ANNEX VI

INFORMATION REQUIREMENTS REFERRED TO IN ARTICLE 10

GUIDANCE NOTE ON FULFILLING THE REQUIREMENTS OF ANNEXES VI TO XI

Annexes VI to XI specify the information that shall be submitted for registration and evaluation purposes according to Articles 10, 12, 13, 40, 41 and 46. For the lowest tonnage level, the standard requirements are in Annex VII, and every time a new tonnage level is reached, the requirements of the corresponding Annex have to be added. For each registration the precise information requirements will differ, according to tonnage, use and exposure. The Annexes shall thus be considered as a whole, and in conjunction with the overall requirements of registration, evaluation and the duty of care.

STEP 1 — GATHER AND SHARE EXISTING INFORMATION

The registrant should gather all existing available test data on the substance to be registered, this would include a literature search for relevant information on the substance. Wherever practicable, registrations should be submitted jointly, in accordance with Articles 11 or 19. This will enable test data to be shared, thereby avoiding unnecessary testing and reducing costs. The registrant should also collect all other available and relevant information on the substance regardless whether testing for a given endpoint is required or not at the specific tonnage level. This should include information from alternative sources (e.g. from (Q)SARs, read-across from other substances, *in vivo* and *in vitro* testing, epidemiological data) which may assist in identifying the presence or absence of hazardous properties of the substance and which can in certain cases replace the results of animal tests.

In addition, information on exposure, use and risk management measures in accordance with Article 10 and this Annex should be collected. Considering all this information together, the registrant will be able to determine the need to generate further information.

STEP 2 — CONSIDER INFORMATION NEEDS

The registrant shall identify what information is required for the registration. First, the relevant Annex or Annexes to be followed shall be identified, according to tonnage. These Annexes set out the standard information requirements, but shall be considered in conjunction with Annex XI, which allows variation from the standard approach, where it can be justified. In particular, information on exposure, use and risk management measures shall be considered at this stage in order to determine the information needs for the substance.

STEP 3 — IDENTIFY INFORMATION GAPS

The registrant shall then compare the information needs for the substance with the information already available and identify where there are gaps. It is important at this stage to ensure that the available data is relevant and has sufficient quality to fulfil the requirements.

STEP 4 — GENERATE NEW DATA/PROPOSE TESTING STRATEGY

In some cases it will not be necessary to generate new data. However, where there is an information gap that needs to be filled, new data shall be generated (Annexes VII and VIII), or a testing strategy shall be proposed (Annexes IX and X), depending on the tonnage. New tests on vertebrates shall only be conducted or proposed as a last resort when all other data sources have been exhausted.

In some cases, the rules set out in Annexes VII to XI may require certain tests to be undertaken earlier than or in addition to the standard requirements.

NOTES

Note 1: If it is not technically possible, or if it does not appear scientifically necessary to give information, the reasons shall be clearly stated, in accordance with the relevant provisions.

Note 2: The registrant may wish to declare that certain information submitted in the registration dossier is commercially sensitive and its disclosure might harm him commercially. If this is the case, he shall list the items and provide a justification.

INFORMATION REFERRED TO IN ARTICLE 10(a) (i) TO (v)

1. GENERAL REGISTRANT INFORMATION

1.1. Registrant

1.1.1. Name, address, telephone number, fax number and e-mail address

1.1.2. Contact person

1.1.3. Location of the registrant's production and own use site(s), as appropriate

1.2. Joint submission of data

Articles 11 or 19 foresee that parts of the registration may be submitted by a lead registrant on behalf of other registrants.

In this case, the lead registrant shall identify the other registrants specifying:

- their name, address, telephone number, fax number and e-mail address,
- parts of the present registration which apply to other registrants.

Mention the number(s) given in this Annex or Annexes VII to X, as appropriate.

Any other registrant shall identify the lead registrant submitting on his behalf specifying:

- his name, address, telephone number, fax number and e-mail address,
- parts of the registration which are submitted by the lead registrant.

Mention the number(s) given in this Annex or Annexes VII to X, as appropriate.

1.3. Third party appointed under Article 4

1.3.1. Name, address, telephone number, fax number and e-mail address

1.3.2. Contact person

2. IDENTIFICATION OF THE SUBSTANCE

For each substance, the information given in this section shall be sufficient to enable each substance to be identified. If it is not technically possible or if it does not appear scientifically necessary to give information on one or more of the items below, the reasons shall be clearly stated.

2.1. Name or other identifier of each substance

2.1.1. Name(s) in the IUPAC nomenclature or other international chemical name(s)

2.1.2. Other names (usual name, trade name, abbreviation)

2.1.3. EINECS or ELINCS number (if available and appropriate)

2.1.4. CAS name and CAS number (if available)

2.1.5. Other identity code (if available)

2.2. Information related to molecular and structural formula of each substance

2.2.1. Molecular and structural formula (including SMILES notation, if available)

2.2.2. Information on optical activity and typical ratio of (stereo) isomers (if applicable and appropriate)

2.2.3. Molecular weight or molecular weight range

2.3. Composition of each substance

2.3.1. Degree of purity (%)

2.3.2. Nature of impurities, including isomers and by-products

2.3.3. Percentage of (significant) main impurities

2.3.4. Nature and order of magnitude (... ppm, ... %) of any additives (e.g. stabilising agents or inhibitors)

2.3.5. Spectral data (ultra-violet, infra-red, nuclear magnetic resonance or mass spectrum)

- 2.3.6. High-pressure liquid chromatogram, gas chromatogram
- 2.3.7. Description of the analytical methods or the appropriate bibliographical references for the identification of the substance and, where appropriate, for the identification of impurities and additives. This information shall be sufficient to allow the methods to be reproduced.
3. INFORMATION ON MANUFACTURE AND USE(S) OF THE SUBSTANCE(S)
- 3.1. Overall manufacture, quantities used for production of an article that is subject to registration, and/or imports in tonnes per registrant per year in:
- the calendar year of the registration (estimated quantity)
- 3.2. In the case of a manufacturer or producer of articles: brief description of the technological process used in manufacture or production of articles.
- Precise details of the process, particularly those of a commercially sensitive nature, are not required.
- 3.3. An indication of the tonnage used for his own use(s)
- 3.4. Form (substance, preparation or article) and/or physical state under which the substance is made available to downstream users. Concentration or concentration range of the substance in preparations made available to downstream users and quantities of the substance in articles made available to downstream users.
- 3.5. Brief general description of the identified use(s)
- 3.6. Information on waste quantities and composition of waste resulting from manufacture of the substance, the use in articles and identified uses
- 3.7. Uses advised against (see Safety Data Sheet heading 16)
- Where applicable, an indication of the uses which the registrant advises against and why (i.e. non-statutory recommendations by supplier). This need not be an exhaustive list.
4. CLASSIFICATION AND LABELLING
- 4.1. The hazard classification of the substance(s), resulting from the application of Articles 4 and 6 of Directive 67/548/EEC.
- In addition, for each entry, the reasons why no classification is given for an endpoint should be provided (i.e. if data are lacking, inconclusive, or conclusive but not sufficient for classification).
- 4.2. The resulting hazard label for the substance(s), resulting from the application of Articles 23, 24 and 25 of Directive 67/548/EEC.
- 4.3. Specific concentration limits, where applicable, resulting from the application of Article 4(4) of Directive 67/548/EEC and Articles 4 to 7 of Directive 1999/45/EC.
5. GUIDANCE ON SAFE USE CONCERNING:
- This information shall be consistent with that in the Safety Data Sheet, where such a Safety Data Sheet is required according to Article 31.
- 5.1. First-aid measures (Safety Data Sheet heading 4)
- 5.2. Fire-fighting measures (Safety Data Sheet heading 5)
- 5.3. Accidental release measures (Safety Data Sheet heading 6)
- 5.4. Handling and storage (Safety Data Sheet heading 7)
- 5.5. Transport information (Safety Data Sheet heading 14)
- Where a Chemical Safety Report is not required, the following additional information is required:
- 5.6. Exposure controls/personal protection (Safety Data Sheet heading 8)
- 5.7. Stability and reactivity (Safety Data Sheet heading 10)

- 5.8. Disposal considerations
 - 5.8.1. Disposal considerations (Safety Data Sheet heading 13)
 - 5.8.2. Information on recycling and methods of disposal for industry
 - 5.8.3. Information on recycling and methods of disposal for the public.

 - 6. INFORMATION ON EXPOSURE FOR SUBSTANCES REGISTERED IN QUANTITIES BETWEEN 1 AND 10 TONNES PER YEAR PER MANUFACTURER OR IMPORTER
 - 6.1. Main use category:
 - 6.1.1. (a) industrial use; and/or
 - (b) professional use; and/or
 - (c) consumer use.
 - 6.1.2. Specification for industrial and professional use:
 - (a) used in closed system; and/or
 - (b) use resulting in inclusion into or onto matrix; and/or
 - (c) non-dispersive use; and/or
 - (d) dispersive use.
 - 6.2. Significant route(s) of exposure:
 - 6.2.1. Human exposure:
 - (a) oral; and/or
 - (b) dermal; and/or
 - (c) inhalatory.
 - 6.2.2. Environmental exposure:
 - (a) water; and/or
 - (b) air; and/or
 - (c) solid waste; and/or
 - (d) soil.
 - 6.3. Pattern of exposure:
 - (a) accidental/infrequent; and/or
 - (b) occasional; and/or
 - (c) continuous/frequent.
-

ANNEX VII

STANDARD INFORMATION REQUIREMENTS FOR SUBSTANCES MANUFACTURED OR IMPORTED IN QUANTITIES OF ONE TONNE OR MORE ⁽¹⁾

Column 1 of this Annex establishes the standard information required for:

- (a) non-phase-in substances manufactured or imported in quantities of 1 to 10 tonnes;
- (b) phase-in substances manufactured or imported in quantities of 1 to 10 tonnes and meeting the criteria in Annex III in accordance with Article 12(1)(a) and (b); and
- (c) substances manufactured or imported in quantities of 10 tonnes or more.

Any other relevant physicochemical, toxicological and ecotoxicological information that is available shall be provided. For substances not meeting the criteria in Annex III only the physicochemical requirements as set out in section 7 of this Annex are required.

Column 2 of this Annex lists specific rules according to which the required standard information may be omitted, replaced by other information, provided at a different stage or adapted in another way. If the conditions are met under which column 2 of this Annex allows adaptations, the registrant shall clearly state this fact and the reasons for each adaptation under the appropriate headings in the registration dossier.

In addition to these specific rules, a registrant may adapt the required standard information set out in column 1 of this Annex according to the general rules contained in Annex XI with the exception of Section 3 on substance-tailored exposure waiving. In this case as well, he shall clearly state the reasons for any decision to adapt the standard information under the appropriate headings in the registration dossier referring to the appropriate specific rule(s) in column 2 or in Annex XI ⁽²⁾.

Before new tests are carried out to determine the properties listed in this Annex, all available *in vitro* data, *in vivo* data, historical human data, data from valid (Q)SARs and data from structurally related substances (read-across approach) shall be assessed first. *In vivo* testing with corrosive substances at concentration/dose levels causing corrosivity shall be avoided. Prior to testing, further guidance on testing strategies should be consulted in addition to this Annex.

When, for certain endpoints, information is not provided for other reasons than those mentioned in column 2 of this Annex or in Annex XI, this fact and the reasons shall also be clearly stated.

7. INFORMATION ON THE PHYSICOCHEMICAL PROPERTIES OF THE SUBSTANCE

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
7.1. State of the substance at 20 °C and 101,3 kPa	
7.2. Melting/freezing point	7.2. The study does not need to be conducted below a lower limit of - 20 °C.
7.3. Boiling point	7.3. The study does not need to be conducted: <ul style="list-style-type: none"> — for gases, or — for solids which either melt above 300 °C or decompose before boiling. In such cases the boiling point under reduced pressure may be estimated or measured, or — for substances which decompose before boiling (e.g. auto-oxidation, rearrangement, degradation, decomposition, etc.).
7.4. Relative density	7.4. The study does not need to be conducted if: <ul style="list-style-type: none"> — the substance is only stable in solution in a particular solvent and the solution density is similar to that of the solvent. In such cases, an indication of whether the solution density is higher or lower than the solvent density is sufficient, or — the substance is a gas. In this case, an estimation based on calculation shall be made from its molecular weight and the Ideal Gas Laws.

⁽¹⁾ This Annex shall apply to producers of articles that are required to register in accordance with Article 7 and to other downstream users that are required to carry out tests under this Regulation adapted as necessary.

⁽²⁾ Note: conditions for not requiring a specific test that are set out in the appropriate test methods in the Commission Regulation on test methods as specified in Article 13(3) that are not repeated in column 2, also apply.

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
7.5. Vapour pressure	7.5. The study does not need to be conducted if the melting point is above 300 °C. If the melting point is between 200 °C and 300 °C, a limit value based on measurement or a recognised calculation method is sufficient.
7.6. Surface tension	7.6. The study need only be conducted if: — based on structure, surface activity is expected or can be predicted, or — surface activity is a desired property of the material. If the water solubility is below 1 mg/l at 20 °C the test does not need to be conducted.
7.7. Water solubility	7.7. The study does not need to be conducted if: — the substance is hydrolytically unstable at pH 4, 7 and 9 (half-life less than 12 hours), or — the substance is readily oxidisable in water. If the substance appears 'insoluble' in water, a limit test up to the detection limit of the analytical method shall be performed.
7.8. Partition coefficient n-octanol/water	7.8. The study does not need to be conducted if the substance is inorganic. If the test cannot be performed (e.g. the substance decomposes, has a high surface activity, reacts violently during the performance of the test or does not dissolve in water or in octanol, or it is not possible to obtain a sufficiently pure substance), a calculated value for log P as well as details of the calculation method shall be provided.
7.9. Flash-point	7.9. The study does not need to be conducted if: — the substance is inorganic, or — the substance only contains volatile organic components with flash-points above 100 °C for aqueous solutions, or — the estimated flash-point is above 200 °C, or — the flash-point can be accurately predicted by interpolation from existing characterised materials.
7.10. Flammability	7.10. The study does not need to be conducted: — if the substance is a solid which possesses explosive or pyrophoric properties. These properties should always be considered before considering flammability, or — for gases, if the concentration of the flammable gas in a mixture with inert gases is so low that, when mixed with air, the concentration is all time below the lower limit, or — for substances which spontaneously ignite when in contact with air.
7.11. Explosive properties	7.11. The study does not need to be conducted if: — there are no chemical groups associated with explosive properties present in the molecule, or — the substance contains chemical groups associated with explosive properties which include oxygen and the calculated oxygen balance is less than -200, or — the organic substance or a homogenous mixture of organic substances contains chemical groups associated with explosive properties, but the exothermic decomposition energy is less than 500 J/g and the onset of exothermic decomposition is below 500 °C, or — for mixtures of inorganic oxidising substances (UN Division 5.1) with organic materials, the concentration of the inorganic oxidising substance is: — less than 15 %, by mass, if assigned to UN Packaging Group I (high hazard) or II (medium hazard), — less than 30 %, by mass, if assigned to UN Packaging Group III (low hazard). Note: Neither a test for propagation of detonation nor a test for sensitivity to detonative shock is required if the exothermic decomposition energy of organic materials is less than 800 J/g.

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
7.12. Self-ignition temperature	7.12. The study does not need to be conducted: <ul style="list-style-type: none"> — if the substance is explosive or ignites spontaneously with air at room temperature, or — for liquids non flammable in air, e.g. no flash point up to 200 °C, or — for gases having no flammable range, or — for solids, if the substance has a melting point \leq 160 °C, or if preliminary results exclude self-heating of the substance up to 400 °C.
7.13. Oxidising properties	7.13. The study does not need to be conducted if: <ul style="list-style-type: none"> — the substance is explosive, or — the substance is highly flammable, or — the substance is an organic peroxide, or — the substance is incapable of reacting exothermically with combustible materials, for example on the basis of the chemical structure (e.g. organic substances not containing oxygen or halogen atoms and these elements are not chemically bonded to nitrogen or oxygen, or inorganic substances not containing oxygen or halogen atoms). <p>The full test does not need to be conducted for solids if the preliminary test clearly indicates that the test substance has oxidising properties.</p> <p>Note that as there is no test method to determine the oxidising properties of gaseous mixtures, the evaluation of these properties must be realised by an estimation method based on the comparison of the oxidising potential of gases in a mixture with that of the oxidising potential of oxygen in air.</p>
7.14. Granulometry	7.14. The study does not need to be conducted if the substance is marketed or used in a non solid or granular form.

8. TOXICOLOGICAL INFORMATION

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
8.1. Skin irritation or skin corrosion The assessment of this endpoint shall comprise the following consecutive steps: (1) an assessment of the available human and animal data, (2) an assessment of the acid or alkaline reserve, (3) <i>in vitro</i> study for skin corrosion, (4) <i>in vitro</i> study for skin irritation.	8.1. Steps 3 and 4 do not need to be conducted if: <ul style="list-style-type: none"> — the available information indicates that the criteria are met for classification as corrosive to the skin or irritating to eyes, or — the substance is flammable in air at room temperature, or — the substance is classified as very toxic in contact with skin, or — an acute toxicity study by the dermal route does not indicate skin irritation up to the limit dose level (2 000 mg/kg body weight).
8.2. Eye irritation The assessment of this endpoint shall comprise the following consecutive steps: (1) an assessment of the available human and animal data, (2) an assessment of the acid or alkaline reserve, (3) <i>in vitro</i> study for eye irritation.	8.2. Step 3 does not need to be conducted if: <ul style="list-style-type: none"> — the available information indicates that the criteria are met for classification as corrosive to the skin or irritating to eyes, or — the substance is flammable in air at room temperature;

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
8.3. Skin sensitisation The assessment of this endpoint shall comprise the following consecutive steps: (1) an assessment of the available human, animal and alternative data, (2) <i>In vivo</i> testing.	8.3. Step 2 does not need to be conducted if: — the available information indicates that the substance should be classified for skin sensitisation or corrosivity, or — the substance is a strong acid (pH ≤ 2,0) or base (pH ≥ 11,5), or — the substance is flammable in air at room temperature. The Murine Local Lymph Node Assay (LLNA) is the first-choice method for <i>in vivo</i> testing. Only in exceptional circumstances should another test be used. Justification for the use of another test shall be provided.
8.4. Mutagenicity 8.4.1. <i>In vitro</i> gene mutation study in bacteria	8.4. Further mutagenicity studies shall be considered in case of a positive result.
8.5. Acute toxicity 8.5.1. By oral route	8.5. The study/ies do(es) not generally need to be conducted if: — the substance is classified as corrosive to the skin. The study need not be conducted if a study on acute toxicity by the inhalation route (8.5.2) is available.

9. ECOTOXICOLOGICAL INFORMATION

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
9.1. Aquatic toxicity 9.1.1. Short-term toxicity testing on invertebrates (preferred species <i>Daphnia</i>) The registrant may consider long-term toxicity testing instead of short-term. 9.1.2. Growth inhibition study aquatic plants (algae preferred)	9.1.1. The study does not need to be conducted if: — there are mitigating factors indicating that aquatic toxicity is unlikely to occur, for instance if the substance is highly insoluble in water or the substance is unlikely to cross biological membranes, or — a long-term aquatic toxicity study on invertebrates is available, or — adequate information for environmental classification and labelling is available. The long-term aquatic toxicity study on <i>Daphnia</i> (Annex IX, section 9.1.5) shall be considered if the substance is poorly water soluble. 9.1.2. The study does not need to be conducted if there are mitigating factors indicating that aquatic toxicity is unlikely to occur for instance if the substance is highly insoluble in water or the substance is unlikely to cross biological membranes.
9.2. Degradation 9.2.1. Biotic 9.2.1.1. Ready biodegradability	9.2.1.1. The study does not need to be conducted if the substance is inorganic.

Any other relevant physicochemical, toxicological and ecotoxicological information that is available shall be provided.

ANNEX VIII

STANDARD INFORMATION REQUIREMENTS FOR SUBSTANCES MANUFACTURED OR IMPORTED IN QUANTITIES OF 10 TONNES OR MORE ⁽¹⁾

Column 1 of this Annex establishes the standard information required for all substances manufactured or imported in quantities of 10 tonnes or more in accordance with Article 12(1)(c). Accordingly, the information required in column 1 of this Annex is additional to that required in column 1 of Annex VII. Any other relevant physicochemical, toxicological and ecotoxicological information that is available shall be provided. Column 2 of this Annex lists specific rules according to which the required standard information may be omitted, replaced by other information, provided at a different stage or adapted in another way. If the conditions are met under which column 2 of this Annex allows adaptations, the registrant shall clearly state this fact and the reasons for each adaptation under the appropriate headings in the registration dossier.

In addition to these specific rules, a registrant may adapt the required standard information set out in column 1 of this Annex according to the general rules contained in Annex XI. In this case as well, he shall clearly state the reasons for any decision to adapt the standard information under the appropriate headings in the registration dossier referring to the appropriate specific rule(s) in column 2 or in Annex XI ⁽²⁾.

Before new tests are carried out to determine the properties listed in this Annex, all available *in vitro* data, *in vivo* data, historical human data, data from valid (Q)SARs and data from structurally related substances (read-across approach) shall be assessed first. *In vivo* testing with corrosive substances at concentration/dose levels causing corrosivity shall be avoided. Prior to testing, further guidance on testing strategies should be consulted in addition to this Annex.

When, for certain endpoints, information is not provided for other reasons than those mentioned in column 2 of this Annex or in Annex XI, this fact and the reasons shall also be clearly stated.

8. TOXICOLOGICAL INFORMATION

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
8.1. Skin irritation 8.1.1. <i>In vivo</i> skin irritation	8.1.1. The study does not need to be conducted if: <ul style="list-style-type: none"> — the substance is classified as corrosive to the skin or as a skin irritant, or — the substance is a strong acid (pH ≤ 2,0) or base (pH ≥ 11,5), or — the substance is flammable in air at room temperature, or — the substance is classified as very toxic in contact with skin, or — an acute toxicity study by the dermal route does not indicate skin irritation up to the limit dose level (2 000 mg/kg body weight).
8.2. Eye irritation 8.2.1. <i>In vivo</i> eye irritation	8.2.1. The study does not need to be conducted if: <ul style="list-style-type: none"> — the substance is classified as irritating to eyes with risk of serious damage to eyes, or — the substance is classified as corrosive to the skin and provided that the registrant classified the substance as eye irritant, or — the substance is a strong acid (pH ≤ 2,0) or base (pH ≥ 11,5), or — the substance is flammable in air at room temperature.
8.4. Mutagenicity 8.4.2. <i>In vitro</i> cytogenicity study in mammalian cells or <i>in vitro</i> micronucleus study	8.4.2. The study does not usually need to be conducted <ul style="list-style-type: none"> — if adequate data from an <i>in vivo</i> cytogenicity test are available, or — the substance is known to be carcinogenic category 1 or 2 or mutagenic category 1, 2 or 3.

⁽¹⁾ This Annex shall apply to producers of articles that are required to register in accordance with Article 7 and to other downstream users that are required to carry out tests under this Regulation adapted as necessary.

⁽²⁾ Note: conditions for not requiring a specific test that are set out in the appropriate test methods in the Commission Regulation on test methods as specified in Article 13(3) that are not repeated in column 2, also apply.

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
<p>8.4.3. <i>In vitro</i> gene mutation study in mammalian cells, if a negative result in Annex VII, Section 8.4.1. and Annex VIII, Section 8.4.2.</p>	<p>8.4.3. The study does not usually need to be conducted if adequate data from a reliable <i>in vivo</i> mammalian gene mutation test are available.</p> <p>8.4. Appropriate <i>in vivo</i> mutagenicity studies shall be considered in case of a positive result in any of the genotoxicity studies in Annex VII or VIII.</p>
<p>8.5. Acute toxicity</p> <p>8.5.2. By inhalation</p> <p>8.5.3. By dermal route</p>	<p>8.5. The study/ies do(es) not generally need to be conducted if: — the substance is classified as corrosive to the skin. In addition to the oral route (8.5.1), for substances other than gases, the information mentioned under 8.5.2 to 8.5.3 shall be provided for at least one other route. The choice for the second route will depend on the nature of the substance and the likely route of human exposure. If there is only one route of exposure, information for only that route need be provided.</p> <p>8.5.2. Testing by the inhalation route is appropriate if exposure of humans via inhalation is likely taking into account the vapour pressure of the substance and/or the possibility of exposure to aerosols, particles or droplets of an inhalable size.</p> <p>8.5.3. Testing by the dermal route is appropriate if: (1) inhalation of the substance is unlikely; and (2) skin contact in production and/or use is likely; and (3) the physicochemical and toxicological properties suggest potential for a significant rate of absorption through the skin.</p>
<p>8.6. Repeated dose toxicity</p> <p>8.6.1. Short-term repeated dose toxicity study (28 days), one species, male and female, most appropriate route of administration, having regard to the likely route of human exposure.</p>	<p>8.6.1. The short-term toxicity study (28 days) does not need to be conducted if: — a reliable sub-chronic (90 days) or chronic toxicity study is available, provided that an appropriate species, dosage, solvent and route of administration were used, or — where a substance undergoes immediate disintegration and there are sufficient data on the cleavage products, or — relevant human exposure can be excluded in accordance with Annex XI Section 3. The appropriate route shall be chosen on the following basis: Testing by the dermal route is appropriate if: (1) inhalation of the substance is unlikely; and (2) skin contact in production and/or use is likely; and (3) the physicochemical and toxicological properties suggest potential for a significant rate of absorption through the skin. Testing by the inhalation route is appropriate if exposure of humans via inhalation is likely taking into account the vapour pressure of the substance and/or the possibility of exposure to aerosols, particles or droplets of an inhalable size. The sub-chronic toxicity study (90 days) (Annex IX, Section 8.6.2) shall be proposed by the registrant if the frequency and duration of human exposure indicates that a longer term study is appropriate;</p>

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
	<p>and one of the following conditions is met:</p> <ul style="list-style-type: none"> — other available data indicate that the substance may have a dangerous property that cannot be detected in a short-term toxicity study, or — appropriately designed toxicokinetic studies reveal accumulation of the substance or its metabolites in certain tissues or organs which would possibly remain undetected in a short-term toxicity study but which are liable to result in adverse effects after prolonged exposure. <p>Further studies shall be proposed by the registrant or may be required by the Agency in accordance with Article 40 or 41 in case of:</p> <ul style="list-style-type: none"> — failure to identify a NOAEL in the 28 or the 90 days study, unless the reason for the failure to identify a NOAEL is absence of adverse toxic effects, or — toxicity of particular concern (e.g. serious/severe effects), or — indications of an effect for which the available evidence is inadequate for toxicological and/or risk characterisation. In such cases it may also be more appropriate to perform specific toxicological studies that are designed to investigate these effects (e.g. immunotoxicity, neurotoxicity), or — the route of exposure used in the initial repeated dose study was inappropriate in relation to the expected route of human exposure and route-to-route extrapolation cannot be made, or — particular concern regarding exposure (e.g. use in consumer products leading to exposure levels which are close to the dose levels at which toxicity to humans may be expected), or — effects shown in substances with a clear relationship in molecular structure with the substance being studied, were not detected in the 28 or the 90 days study.
<p>8.7. Reproductive toxicity</p> <p>8.7.1. Screening for reproductive/developmental toxicity, one species (OECD 421 or 422), if there is no evidence from available information on structurally related substances, from (Q)SAR estimates or from <i>in vitro</i> methods that the substance may be a developmental toxicant</p>	<p>8.7.1. This study does not need to be conducted if:</p> <ul style="list-style-type: none"> — the substance is known to be a genotoxic carcinogen and appropriate risk management measures are implemented, or — the substance is known to be a germ cell mutagen and appropriate risk management measures are implemented, or — relevant human exposure can be excluded in accordance with Annex XI section 3, or — a pre-natal developmental toxicity study (Annex IX, 8.7.2) or a two-generation reproductive toxicity study (Annex IX, Section 8.7.3) is available. <p>If a substance is known to have an adverse effect on fertility, meeting the criteria for classification as Repr Cat 1 or 2: R60, and the available data are adequate to support a robust risk assessment, then no further testing for fertility will be necessary. However, testing for development toxicity must be considered.</p> <p>If a substance is known to cause developmental toxicity, meeting the criteria for classification as Repr Cat 1 or 2: R61, and the available data are adequate to support a robust risk assessment, then no further testing for developmental toxicity will be necessary. However, testing for effects on fertility must be considered.</p> <p>In cases where there are serious concerns about the potential for adverse effects on fertility or development, either a pre-natal developmental toxicity study (Annex IX, Section 8.7.2) or a two-generation reproductive toxicity study (Annex IX, Section 8.7.3) may be proposed by the registrant instead of the screening study.</p>
<p>8.8. Toxicokinetics</p> <p>8.8.1. Assessment of the toxicokinetic behaviour of the substance to the extent that can be derived from the relevant available information</p>	

9. ECOTOXICOLOGICAL INFORMATION

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
9.1.3. Short-term toxicity testing on fish: the registrant may consider long-term toxicity testing instead of short-term.	<p>9.1.3. The study does not need to be conducted if:</p> <ul style="list-style-type: none"> — there are mitigating factors indicating that aquatic toxicity is unlikely to occur, for instance if the substance is highly insoluble in water or the substance is unlikely to cross biological membranes, or — a long-term aquatic toxicity study on fish is available. <p>Long-term aquatic toxicity testing as described in Annex IX shall be considered if the chemical safety assessment according to Annex I indicates the need to investigate further effects on aquatic organisms. The choice of the appropriate test(s) will depend on the results of the chemical safety assessment.</p> <p>The long-term aquatic toxicity study on fish (Annex IX, Section 9.1.6) shall be considered if the substance is poorly water soluble.</p>
9.1.4. Activated sludge respiration inhibition testing	<p>9.1.4. The study does not need to be conducted if:</p> <ul style="list-style-type: none"> — there is no emission to a sewage treatment plant, or — there are mitigating factors indicating that microbial toxicity is unlikely to occur, for instance the substance is highly insoluble in water, or — the substance is found to be readily biodegradable and the applied test concentrations are in the range of concentrations that can be expected in the influent of a sewage treatment plant. <p>The study may be replaced by a nitrification inhibition test if available data show that the substance is likely to be an inhibitor of microbial growth or function, in particular nitrifying bacteria.</p>
9.2. Degradation	<p>9.2. Further degradation testing shall be considered if the chemical safety assessment according to Annex I indicates the need to investigate further the degradation of the substance. The choice of the appropriate test(s) will depend on the results of the chemical safety assessment.</p>
9.2.2. Abiotic	
9.2.2.1. Hydrolysis as a function of pH.	<p>9.2.2.1. The study does not need to be conducted if:</p> <ul style="list-style-type: none"> — the substance is readily biodegradable, or — the substance is highly insoluble in water.
9.3. Fate and behaviour in the environment	<p>9.3.1. The study does not need to be conducted if:</p> <ul style="list-style-type: none"> — based on the physicochemical properties the substance can be expected to have a low potential for adsorption (e.g. the substance has a low octanol water partition coefficient), or — the substance and its relevant degradation products decompose rapidly.

ANNEX IX

STANDARD INFORMATION REQUIREMENTS FOR SUBSTANCES MANUFACTURED OR IMPORTED IN QUANTITIES OF 100 TONNES OR MORE ⁽¹⁾

At the level of this Annex, the registrant must submit a proposal and a time schedule for fulfilling the information requirements of this Annex in accordance with Article 12(1)(d).

Column 1 of this Annex establishes the standard information required for all substances manufactured or imported in quantities of 100 tonnes or more in accordance with Article 12(1)(d). Accordingly, the information required in column 1 of this Annex is additional to that required in column 1 of Annexes VII and VIII. Any other relevant physicochemical, toxicological and ecotoxicological information that is available shall be provided. Column 2 of this Annex lists specific rules according to which the registrant may propose to omit the required standard information, replace it by other information, provide it at a later stage or adapt it in another way. If the conditions are met under which column 2 of this Annex allows an adaptation to be proposed, the registrant shall clearly state this fact and the reasons for proposing each adaptation under the appropriate headings in the registration dossier.

In addition to these specific rules, a registrant may propose to adapt the required standard information set out in column 1 of this Annex according to the general rules contained in Annex XI. In this case as well, he shall clearly state the reasons for any decision to propose adaptations to the standard information under the appropriate headings in the registration dossier referring to the appropriate specific rule(s) in column 2 or in Annex XI ⁽²⁾.

Before new tests are carried out to determine the properties listed in this Annex, all available *in vitro* data, *in vivo* data, historical human data, data from valid (Q)SARs and data from structurally related substances (read-across approach) shall be assessed first. *In vivo* testing with corrosive substances at concentration/dose levels causing corrosivity shall be avoided. Prior to testing, further guidance on testing strategies should be consulted in addition to this Annex.

When, for certain endpoints, it is proposed not to provide information for other reasons than those mentioned in column 2 of this Annex or in Annex XI, this fact and the reasons shall also be clearly stated.

7. INFORMATION ON THE PHYSICOCHEMICAL PROPERTIES OF THE SUBSTANCE

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
7.15. Stability in organic solvents and identity of relevant degradation products Only required if stability of the substance is considered to be critical.	7.15. The study does not need to be conducted if the substance is inorganic.
7.16. Dissociation constant	7.16. The study does not need to be conducted if: — the substance is hydrolytically unstable (half-life less than 12 hours) or is readily oxidisable in water, or — it is scientifically not possible to perform the test for instance if the analytical method is not sensitive enough.
7.17. Viscosity	

⁽¹⁾ This Annex shall apply to producers of articles that are required to register in accordance with Article 7 and to other downstream users that are required to carry out tests under this Regulation adapted as necessary.

⁽²⁾ Note: conditions for not requiring a specific test that are set out in the appropriate test methods in the Commission Regulation on test methods as specified in Article 13(3) that are not repeated in column 2, also apply.

8. TOXICOLOGICAL INFORMATION

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
	<p>8.4. If there is a positive result in any of the <i>in vitro</i> genotoxicity studies in Annex VII or VIII and there are no results available from an <i>in vivo</i> study already, an appropriate <i>in vivo</i> somatic cell genotoxicity study shall be proposed by the registrant.</p> <p>If there is a positive result from an <i>in vivo</i> somatic cell study available, the potential for germ cell mutagenicity should be considered on the basis of all available data, including toxicokinetic evidence. If no clear conclusions about germ cell mutagenicity can be made, additional investigations shall be considered.</p>
<p>8.6. Repeated dose toxicity</p> <p>8.6.1. Short-term repeated dose toxicity study (28 days), one species, male and female, most appropriate route of administration, having regard to the likely route of human exposure, unless already provided as part of Annex VIII requirements or if tests according to Section 8.6.2 of this Annex is proposed. In this case, Section 3 of Annex XI shall not apply.</p> <p>8.6.2. Sub-chronic toxicity study (90-day), one species, rodent, male and female, most appropriate route of administration, having regard to the likely route of human exposure.</p>	<p>8.6.2. The sub-chronic toxicity study (90 days) does not need to be conducted if:</p> <ul style="list-style-type: none"> — a reliable short-term toxicity study (28 days) is available showing severe toxicity effects according to the criteria for classifying the substance as R48, for which the observed NOAEL-28 days, with the application of an appropriate uncertainty factor, allows the extrapolation towards the NOAEL-90 days for the same route of exposure, or — a reliable chronic toxicity study is available, provided that an appropriate species and route of administration were used, or — a substance undergoes immediate disintegration and there are sufficient data on the cleavage products (both for systemic effects and effects at the site of uptake), or — the substance is unreactive, insoluble and not inhalable and there is no evidence of absorption and no evidence of toxicity in a 28-day 'limit test', particularly if such a pattern is coupled with limited human exposure. <p>The appropriate route shall be chosen on the following basis:</p> <p>Testing by the dermal route is appropriate if:</p> <ol style="list-style-type: none"> (1) skin contact in production and/or use is likely; and (2) the physicochemical properties suggest a significant rate of absorption through the skin; and (3) one of the following conditions is met: <ul style="list-style-type: none"> — toxicity is observed in the acute dermal toxicity test at lower doses than in the oral toxicity test, or — systemic effects or other evidence of absorption is observed in skin and/or eye irritation studies, or — <i>in vitro</i> tests indicate significant dermal absorption, or — significant dermal toxicity or dermal penetration is recognised for structurally-related substances.

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
8.7.3. Two-generation reproductive toxicity study, one species, male and female, most appropriate route of administration, having regard to the likely route of human exposure, if the 28-day or 90-day study indicates adverse effects on reproductive organs or tissues.	8.7.3. The study shall be initially performed on one species. A decision on the need to perform a study at this tonnage level or the next on a second species should be based on the outcome of the first test and all other relevant available data.

9. ECOTOXICOLOGICAL INFORMATION

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
9.1. Aquatic toxicity 9.1.5. Long-term toxicity testing on invertebrates (preferred species <i>Daphnia</i>), (unless already provided as part of Annex VII requirements) 9.1.6. Long-term toxicity testing on fish, (unless already provided as part of Annex VIII requirements) The information shall be provided for one of the Sections 9.1.6.1, 9.1.6.2 or 9.1.6.3. 9.1.6.2. Fish early-life stage (FELS) toxicity test 9.1.6.2. Fish short-term toxicity test on embryo and sac-fry stages 9.1.6.3. Fish, juvenile growth test	9.1. Long-term toxicity testing shall be proposed by the registrant if the chemical safety assessment according to Annex I indicates the need to investigate further the effects on aquatic organisms. The choice of the appropriate test(s) depends on the results of the chemical safety assessment.
9.2. Degradation 9.2.1. Biotic 9.2.1.2. Simulation testing on ultimate degradation in surface water	9.2. Further biotic degradation testing shall be proposed by the registrant if the chemical safety assessment according to Annex I indicates the need to investigate further the degradation of the substance and its degradation products. The choice of the appropriate test(s) depends on the results of the chemical safety assessment and may include simulation testing in appropriate media (e.g. water, sediment or soil). 9.2.1.2. The study need not be conducted if: <ul style="list-style-type: none"> — the substances is highly insoluble in water, or — the substance is readily biodegradable.

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
9.2.1.3. Soil simulation testing (for substances with a high potential for adsorption to soil) 9.2.1.4. Sediment simulation testing (for substances with a high potential for adsorption to sediment) 9.2.3. Identification of degradation products	9.2.1.3. The study need not be conducted: — if the substance is readily biodegradable, or — if direct and indirect exposure of soil is unlikely. 9.2.1.4. The study need not be conducted: — if the substance is readily biodegradable, or — if direct and indirect exposure of sediment is unlikely. 9.2.3. Unless the substance is readily biodegradable
9.3. Fate and behaviour in the environment 9.3.2. Bioaccumulation in aquatic species, preferably fish 9.3.3. Further information on adsorption/desorption depending on the results of the study required in Annex VIII	9.3.2. The study need not be conducted if: — the substance has a low potential for bioaccumulation (for instance a $\log K_{ow} \leq 3$) and/or a low potential to cross biological membranes, or — direct and indirect exposure of the aquatic compartment is unlikely. 9.3.3. The study need not be conducted if: — based on the physicochemical properties the substance can be expected to have a low potential for adsorption (e.g. the substance has a low octanol water partition coefficient), or — the substance and its degradation products decompose rapidly.
9.4. Effects on terrestrial organisms 9.4.1. Short-term toxicity to invertebrates 9.4.2. Effects on soil micro-organisms 9.4.3. Short-term toxicity to plants	9.4. These studies do not need to be conducted if direct and indirect exposure of the soil compartment is unlikely. In the absence of toxicity data for soil organisms, the equilibrium partitioning method may be applied to assess the hazard to soil organisms. The choice of the appropriate tests depends on the outcome of the chemical safety assessment. In particular for substances that have a high potential to adsorb to soil or that are very persistent, the registrant shall consider long-term toxicity testing instead of short-term.

10. METHODS OF DETECTION AND ANALYSIS

Description of the analytical methods shall be provided on request, for the relevant compartments for which studies were performed using the analytical method concerned. If the analytical methods are not available this shall be justified.

ANNEX X

STANDARD INFORMATION REQUIREMENTS FOR SUBSTANCES MANUFACTURED OR IMPORTED IN QUANTITIES OF 1 000 TONNES OR MORE ⁽¹⁾

At the level of this Annex, the registrant must submit a proposal and a time schedule for fulfilling the information requirements of this Annex in accordance with Article 12(1)(e).

Column 1 of this Annex establishes the standard information required for all substances manufactured or imported in quantities of 1 000 tonnes or more in accordance with Article 12(1)(e). Accordingly, the information required in column 1 of this Annex is additional to that required in column 1 of Annexes VII, VIII and IX. Any other relevant physicochemical, toxicological and ecotoxicological information that is available shall be provided. Column 2 of this Annex lists specific rules according to which the registrant may propose to omit the required standard information, replace it by other information, provide it at a later stage or adapt it in another way. If the conditions are met under which column 2 of this Annex allows an adaptation to be proposed, the registrant shall clearly state this fact and the reasons for proposing each adaptation under the appropriate headings in the registration dossier.

In addition to these specific rules, a registrant may propose to adapt the required standard information set out in column 1 of this Annex according to the general rules contained in Annex XI. In this case as well, he shall clearly state the reasons for any decision to propose adaptations to the standard information under the appropriate headings in the registration dossier referring to the appropriate specific rule(s) in column 2 or in Annex XI ⁽²⁾.

Before new tests are carried out to determine the properties listed in this Annex, all available *in vitro* data, *in vivo* data, historical human data, data from valid (Q)SARs and data from structurally related substances (read-across approach) shall be assessed first. *In vivo* testing with corrosive substances at concentration/dose levels causing corrosivity shall be avoided. Prior to testing, further guidance on testing strategies should be consulted in addition to this Annex.

When, for certain endpoints, it is proposed not to provide information for other reasons than those mentioned in column 2 of this Annex or in Annex XI, this fact and the reasons shall also be clearly stated.

8. TOXICOLOGICAL INFORMATION

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
	<p>8.4. If there is a positive result in any of the <i>in vitro</i> genotoxicity studies in Annexes VII or VIII, a second <i>in vivo</i> somatic cell test may be necessary, depending on the quality and relevance of all the available data. If there is a positive result from an <i>in vivo</i> somatic cell study available, the potential for germ cell mutagenicity should be considered on the basis of all available data, including toxicokinetic evidence. If no clear conclusions about germ cell mutagenicity can be made, additional investigations shall be considered.</p>
	<p>8.6.3. A long-term repeated toxicity study (≥ 12 months) may be proposed by the registrant or required by the Agency in accordance with Articles 40 or 41 if the frequency and duration of human exposure indicates that a longer term study is appropriate and one of the following conditions is met:</p> <ul style="list-style-type: none"> — serious or severe toxicity effects of particular concern were observed in the 28-day or 90-day study for which the available evidence is inadequate for toxicological evaluation or risk characterisation, or — effects shown in substances with a clear relationship in molecular structure with the substance being studied were not detected in the 28-day or 90-day study, or — the substance may have a dangerous property that cannot be detected in a 90-day study.

⁽¹⁾ This Annex shall apply to producers of articles that are required to register in accordance with Article 7 and to other downstream users that are required to carry out tests under this Regulation adapted as necessary.

⁽²⁾ Note: conditions for not requiring a specific test that are set out in the appropriate test methods in the Commission Regulation on test methods as specified in Article 13(3) that are not repeated in column 2, also apply.

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
<p>8.7. Reproductive toxicity</p> <p>8.7.2. Developmental toxicity study, one species, most appropriate route of administration, having regard to the likely route of human exposure (OECD 414).</p> <p>8.7.3. Two-generation reproductive toxicity study, one species, male and female, most appropriate route of administration, having regard to the likely route of human exposure, unless already provided as part of Annex IX requirements</p>	<p>8.6.4. Further studies shall be proposed by the registrant or may be required by the Agency in accordance with Articles 40 or 41 in case of:</p> <ul style="list-style-type: none"> — toxicity of particular concern (e.g. serious/severe effects), or — indications of an effect for which the available evidence is inadequate for toxicological evaluation and/or risk characterisation. In such cases it may also be more appropriate to perform specific toxicological studies that are designed to investigate these effects (e.g. immunotoxicity, neurotoxicity), or — particular concern regarding exposure (e.g. use in consumer products leading to exposure levels which are close to the dose levels at which toxicity is observed). <p>8.7. The studies need not be conducted if:</p> <ul style="list-style-type: none"> — the substance is known to be a genotoxic carcinogen and appropriate risk management measures are implemented, or — the substance is known to be a germ cell mutagen and appropriate risk management measures are implemented, or — the substance is of low toxicological activity (no evidence of toxicity seen in any of the tests available), it can be proven from toxicokinetic data that no systemic absorption occurs via relevant routes of exposure (e.g. plasma/blood concentrations below detection limit using a sensitive method and absence of the substance and of metabolites of the substance in urine, bile or exhaled air) and there is no or no significant human exposure. <p>If a substance is known to have an adverse effect on fertility, meeting the criteria for classification as Repr Cat 1 or 2: R60, and the available data are adequate to support a robust risk assessment, then no further testing for fertility will be necessary. However, testing for development toxicity must be considered.</p> <p>If a substance is known to cause developmental toxicity, meeting the criteria for classification as Repr Cat 1 or 2: R61, and the available data are adequate to support a robust risk assessment, then no further testing for developmental toxicity will be necessary. However, testing for effects on fertility must be considered.</p>
<p>8.9.1. Carcinogenicity study</p>	<p>8.9.1. A carcinogenicity study may be proposed by the registrant or may be required by the Agency in accordance with Articles 40 or 41 if:</p> <ul style="list-style-type: none"> — the substance has a widespread dispersive use or there is evidence of frequent or long-term human exposure, and — the substance is classified as mutagen category 3 or there is evidence from the repeated dose study(ies) that the substance is able to induce hyperplasia and/or pre-neoplastic lesions. <p>If the substances is classified as mutagen category 1 or 2, the default presumption would be that a genotoxic mechanism for carcinogenicity is likely. In these cases, a carcinogenicity test will normally not be required.</p>

9. ECOTOXICOLOGICAL INFORMATION

COLUMN 1 STANDARD INFORMATION REQUIRED	COLUMN 2 SPECIFIC RULES FOR ADAPTATION FROM COLUMN 1
9.2. Degradation 9.2.1. Biotic	9.2. Further biotic degradation testing shall be proposed if the chemical safety assessment according to Annex I indicates the need to investigate further the degradation of the substance and its degradation products. The choice of the appropriate test(s) depends on the results of the chemical safety assessment and may include simulation testing in appropriate media (e.g. water, sediment or soil).
9.3. Fate and behaviour in the environment 9.3.4. Further information on the environmental fate and behaviour of the substance and/or degradation products 9.4. Effects on terrestrial organisms 9.4.4. Long-term toxicity testing on invertebrates, unless already provided as part of Annex IX requirements. 9.4.6. Long-term toxicity testing on plants, unless already provided as part of Annex IX requirements. 9.5.1. Long-term toxicity to sediment organisms 9.6.1. Long-term or reproductive toxicity to birds	9.3.4. Further testing shall be proposed by the registrant or may be required by the Agency in accordance with Articles 40 or 41 if the chemical safety assessment according to Annex I indicates the need to investigate further the fate and behaviour of the substance. The choice of the appropriate test(s) depends on the results of the chemical safety assessment. 9.4. Long-term toxicity testing shall be proposed by the registrant if the results of the chemical safety assessment according to Annex I indicates the need to investigate further the effects of the substance and/or degradation products on terrestrial organisms. The choice of the appropriate test(s) depends on the outcome of the chemical safety assessment. These studies do not need to be conducted if direct and indirect exposure of the soil compartment is unlikely. 9.5.1. Long-term toxicity testing shall be proposed by the registrant if the results of the chemical safety assessment indicates the need to investigate further the effects of the substance and/or relevant degradation products on sediment organisms. The choice of the appropriate test(s) depends on the results of the chemical safety assessment. 9.6.1. Any need for testing should be carefully considered taking into account the large mammalian dataset that is usually available at this tonnage level.

10. METHODS OF DETECTION AND ANALYSIS

Description of the analytical methods shall be provided on request, for the relevant compartments for which studies were performed using the analytical method concerned. If the analytical methods are not available this shall be justified.

ANNEX XI

GENERAL RULES FOR ADAPTATION OF THE STANDARD TESTING REGIME SET OUT IN ANNEXES VII TO X

Annexes VII to X set out the information requirements for all substances manufactured or imported in quantities of:

- one tonne or more in accordance with Article 12(1)(a),
- 10 tonnes or more in accordance with Article 12(1)(c),
- 100 tonnes or more in accordance with Article 12(1)(d), and
- 1 000 tonnes or more in accordance with Article 12(1)(e).

In addition to the specific rules set out in column 2 of Annexes VII to X, a registrant may adapt the standard testing regime in accordance with the general rules set out in Section 1 of this Annex. Under dossier evaluation the Agency may assess these adaptations to the standard testing regime.

1. TESTING DOES NOT APPEAR SCIENTIFICALLY NECESSARY**1.1. Use of existing data****1.1.1. *Data on physical-chemical properties from experiments not carried out according to GLP or the test methods referred to in Article 13(3)***

Data shall be considered to be equivalent to data generated by the corresponding test methods referred to in Article 13(3) if the following conditions are met:

- (1) adequacy for the purpose of classification and labelling and/or risk assessment;
- (2) sufficient documentation is provided to assess the adequacy of the study; and
- (3) the data are valid for the endpoint being investigated and the study is performed using an acceptable level of quality assurance.

1.1.2. *Data on human health and environmental properties from experiments not carried out according to GLP or the test methods referred to in Article 13(3)*

Data shall be considered to be equivalent to data generated by the corresponding test methods referred to in Article 13(3) if the following conditions are met:

- (1) adequacy for the purpose of classification and labelling and/or risk assessment;
- (2) adequate and reliable coverage of the key parameters foreseen to be investigated in the corresponding test methods referred to in Article 13(3);
- (3) exposure duration comparable to or longer than the corresponding test methods referred to in Article 13(3) if exposure duration is a relevant parameter; and
- (4) adequate and reliable documentation of the study is provided.

1.1.3. *Historical human data*

Historical human data, such as epidemiological studies on exposed populations, accidental or occupational exposure data and clinical studies, shall be considered.

The strength of the data for a specific human health effect depends, among other things, on the type of analysis and on the parameters covered and on the magnitude and specificity of the response and consequently the predictability of the effect. Criteria for assessing the adequacy of the data include:

- (1) the proper selection and characterisation of the exposed and control groups;
- (2) adequate characterisation of exposure;
- (3) sufficient length of follow-up for disease occurrence;
- (4) valid method for observing an effect;
- (5) proper consideration of bias and confounding factors; and
- (6) a reasonable statistical reliability to justify the conclusion.

In all cases adequate and reliable documentation shall be provided.

1.2. Weight of evidence

There may be sufficient weight of evidence from several independent sources of information leading to the assumption/conclusion that a substance has or has not a particular dangerous property, while the information from each single source alone is regarded insufficient to support this notion.

There may be sufficient weight of evidence from the use of newly developed test methods, not yet included in the test methods referred to in Article 13(3) or from an international test method recognised by the Commission or the Agency as being equivalent, leading to the conclusion that a substance has or has not a particular dangerous property.

Where sufficient weight of evidence for the presence or absence of a particular dangerous property is available:

- further testing on vertebrate animals for that property shall be omitted,
- further testing not involving vertebrate animals may be omitted.

In all cases adequate and reliable documentation shall be provided.

1.3. Qualitative or Quantitative structure-activity relationship ((Q)SAR)

Results obtained from valid qualitative or quantitative structure-activity relationship models ((Q)SARs) may indicate the presence or absence of a certain dangerous property. Results of (Q)SARs may be used instead of testing when the following conditions are met:

- results are derived from a (Q)SAR model whose scientific validity has been established,
- the substance falls within the applicability domain of the (Q)SAR model,
- results are adequate for the purpose of classification and labelling and/or risk assessment, and
- adequate and reliable documentation of the applied method is provided.

The Agency in collaboration with the Commission, Member States and interested parties shall develop and provide guidance in assessing which (Q)SARs will meet these conditions and provide examples.

1.4. *In vitro* methods

Results obtained from suitable *in vitro* methods may indicate the presence of a certain dangerous property or may be important in relation to a mechanistic understanding, which may be important for the assessment. In this context, 'suitable' means sufficiently well developed according to internationally agreed test development criteria (e. g. the European Centre for the Validation of Alternative Methods (ECVAM)) criteria for the entry of a test into the prevalidation process). Depending on the potential risk, immediate confirmation requiring testing beyond the information foreseen in Annexes VII or VIII or proposed confirmation requiring testing beyond the information foreseen in Annexes IX or X for the respective tonnage level may be necessary.

If the results obtained from the use of such *in vitro* methods do not indicate a certain dangerous property, the relevant test shall nevertheless be carried out at the appropriate tonnage level to confirm the negative result, unless testing is not required in accordance with Annexes VII to X or the other rules in this Annex.

Such confirmation may be waived, if the following conditions are met:

- (1) results are derived from an *in vitro* method whose scientific validity has been established by a validation study, according to internationally agreed validation principles;
- (2) results are adequate for the purpose of classification and labelling and/or risk assessment; and
- (3) adequate and reliable documentation of the applied method is provided.

1.5. Grouping of substances and read-across approach

Substances whose physicochemical, toxicological and ecotoxicological properties are likely to be similar or follow a regular pattern as a result of structural similarity may be considered as a group, or 'category' of substances. Application of the group concept requires that physicochemical properties, human health effects and environmental effects or environmental fate may be predicted from data for reference substance(s) within the group by interpolation to other substances in the group (read-across approach). This avoids the need to test every substance for every endpoint. The Agency, after consulting with relevant stakeholders and other interested parties, shall issue guidance on technically and scientifically justified methodology for the grouping of substances sufficiently in advance of the first registration deadline for phase-in substances.

The similarities may be based on:

- (1) a common functional group;
- (2) the common precursors and/or the likelihood of common breakdown products via physical and biological processes, which result in structurally similar chemicals; or
- (3) a constant pattern in the changing of the potency of the properties across the category.

If the group concept is applied, substances shall be classified and labelled on this basis.

In all cases results should:

- be adequate for the purpose of classification and labelling and/or risk assessment,
- have adequate and reliable coverage of the key parameters addressed in the corresponding test method referred to in Article 13(3),
- cover an exposure duration comparable to or longer than the corresponding test method referred to in Article 13(3) if exposure duration is a relevant parameter, and
- adequate and reliable documentation of the applied method shall be provided.

2. TESTING IS TECHNICALLY NOT POSSIBLE

Testing for a specific endpoint may be omitted, if it is technically not possible to conduct the study as a consequence of the properties of the substance: e.g. very volatile, highly reactive or unstable substances cannot be used, mixing of the substance with water may cause danger of fire or explosion or the radio-labelling of the substance required in certain studies may not be possible. The guidance given in the test methods referred to in Article 13(3), more specifically on the technical limitations of a specific method, shall always be respected.

3. SUBSTANCE-TAILORED EXPOSURE-DRIVEN TESTING

- 3.1. Testing in accordance with Sections 8.6 and 8.7 of Annex VIII, Annex IX and Annex X may be omitted, based on the exposure scenario(s) developed in the Chemical Safety Report.
 - 3.2. In all cases, adequate justification and documentation shall be provided. The justification shall be based on an exposure assessment in accordance with Section 5 of Annex I and be consistent with the criteria adopted pursuant to Section 3.3, and the specific conditions of use must be communicated through the chemical supply chain in accordance with Articles 31 or 32.
 - 3.3. The Commission shall adopt the measures designed to amend non-essential elements of this Regulation by supplementing it, in accordance with the procedure referred to in Article 133(4), to set the criteria defining what constitutes adequate justification under Section 3.2 by 1 December 2008.
-

ANNEX XII

GENERAL PROVISIONS FOR DOWNSTREAM USERS TO ASSESS SUBSTANCES AND PREPARE CHEMICAL SAFETY REPORTS

INTRODUCTION

The purpose of this Annex is to set out how downstream users are to assess and document that the risks arising from the substance(s) they use are adequately controlled during their use for a use not covered by the Safety Data Sheet supplied to them and that other users further down the supply chain can adequately control the risks. The assessment shall cover the life-cycle of the substance, from its receipt by the downstream user, for his own uses and for his identified uses further down the supply chain. The assessment shall consider the use of the substance on its own, in a preparation or in an article.

In carrying out the chemical safety assessment and producing the Chemical Safety Report, the downstream user shall take account of information received from the supplier of the chemical in accordance with Article 31 and 32 of this Regulation. Where available and appropriate, an assessment carried out under Community legislation, (e.g. risk assessments completed under Regulation (EEC) No 793/93) shall be taken into account in the chemical safety assessment and be reflected in the Chemical Safety Report. Deviations from such assessments shall be justified. Assessments carried out under other international and national programmes may also be taken into account.

The process which the downstream user goes through in carrying out the chemical safety assessment and in producing his Chemical Safety Report, involves three steps:

STEP 1: DEVELOPMENT OF EXPOSURE SCENARIO(S)

The downstream user shall develop exposure scenarios for uses not covered in a Safety Data Sheet supplied to him in accordance with Section 5 of Annex I.

STEP 2: IF NECESSARY, A REFINEMENT OF THE HAZARD ASSESSMENT BY THE SUPPLIER

If the downstream user considers the hazard and PBT assessments reported in the Safety Data Sheet supplied to him to be appropriate, then no further hazard assessment or PBT and vPvB assessment is necessary. In this case he shall use the relevant information reported by the supplier for the risk characterisation. This shall be stated in the Chemical Safety Report.

If the downstream user considers the assessments reported in the Safety Data Sheet supplied to him to be inappropriate, then he shall carry out the relevant assessments in accordance with Sections 1 to 4 of Annex I as appropriate to him.

In those cases where the downstream user considers that information in addition to that provided by the supplier is necessary for producing his Chemical Safety Report the downstream user shall gather this information. Where this information can only be obtained by testing on vertebrate animals, he shall submit a proposal for a testing strategy to the Agency in accordance with Article 38. He shall explain why he considers that additional information is necessary. While waiting for results of further testing, he shall record in his chemical safety report the risk management measures intended to manage the risks being explored that he has put in place.

On completion of any additional testing, the downstream user shall revise the Chemical Safety Report, and his Safety Data Sheet if he is required to prepare one, as appropriate.

STEP 3: RISK CHARACTERISATION

A risk characterisation shall be carried out for each new exposure scenario as prescribed in Section 6 of Annex I. The risk characterisation shall be presented under the relevant heading of the Chemical Safety Report and summarised in the Safety Data Sheet under the relevant heading(s).

When generating an exposure scenario it will be necessary to make initial assumptions about the operating conditions and risk management measures. If the initial assumptions lead to a risk characterisation indicating inadequate protection of human health and the environment, then it shall be necessary to carry out an iterative process with amendment of one or a number of factors until adequate control can be demonstrated. This may require the generation of additional hazard or exposure information or appropriate alteration of the process, operating conditions or risk management measures. Therefore, iterations may be made between on the one hand developing and revising an (initial) exposure scenario, which includes developing and implementing risk management measures, and on the other hand generating further information to produce the definitive exposure scenario. The purpose of generating further information is to establish a more precise risk characterisation, based on a refined hazard assessment and/or exposure assessment.

The downstream user shall produce a Chemical Safety Report detailing his chemical safety assessment using Part B, Sections 9 and 10, of the format set out in Section 7 of Annex I and the other sections of this format, if appropriate.

Part A of the Chemical Safety Report shall include a declaration that the risk management measures outlined in the relevant exposure scenarios are implemented by the downstream user for his own uses and that the risk management measures outlined in the exposure scenarios for the identified uses are communicated down the supply chain.

ANNEX XIII

CRITERIA FOR THE IDENTIFICATION OF PERSISTENT, BIOACCUMULATIVE AND TOXIC SUBSTANCES, AND VERY PERSISTENT AND VERY BIOACCUMULATIVE SUBSTANCES

This Annex lays down the criteria for the identification of:

- (i) persistent, bioaccumulative and toxic substances (PBT-substances), and
- (ii) very persistent and very bioaccumulative substances (vPvB-substances).

A substance is identified as a PBT substance if it fulfils the criteria in Sections 1.1, 1.2 and 1.3. A substance is identified as a vPvB substance if it fulfils the criteria in Sections 2.1 and 2.2. This annex shall not apply to inorganic substances, but shall apply to organo-metals.

1. PBT-SUBSTANCES

A substance that fulfils all three of the criteria of the sections below is a PBT substance.

1.1. Persistence

A substance fulfils the persistence criterion (P-) when:

- the half-life in marine water is higher than 60 days, or
- the half-life in fresh- or estuarine water is higher than 40 days, or
- the half-life in marine sediment is higher than 180 days, or
- the half-life in fresh- or estuarine water sediment is higher than 120 days, or
- the half-life in soil is higher than 120 days.

The assessment of the persistency in the environment shall be based on available half-life data collected under the adequate conditions, which shall be described by the registrant.

1.2. Bioaccumulation

A substance fulfils the bioaccumulation criterion (B-) when:

- the bioconcentration factor (BCF) is higher than 2 000.

The assessment of bioaccumulation shall be based on measured data on bioconcentration in aquatic species. Data from freshwater as well as marine water species can be used.

1.3. Toxicity

A substance fulfils the toxicity criterion (T-) when:

- the long-term no-observed effect concentration (Noec) for marine or freshwater organisms is less than 0,01 mg/l, or
- the substance is classified as carcinogenic (category 1 or 2), mutagenic (category 1 or 2), or toxic for reproduction (category 1, 2, or 3), or
- there is other evidence of chronic toxicity, as identified by the classifications: T, R48, or Xn, R48 according to Directive 67/548/EEC.

2. vPvB-SUBSTANCES

A substance that fulfils the criteria of the sections below is a vPvB substance.

2.1. Persistence

A substance fulfils the very persistence criterion (vP-) when:

- the half-life in marine, fresh- or estuarine water is higher than 60 days, or
- the half-life in marine, fresh- or estuarine water sediment is higher than 180 days, or
- the half-life in soil is higher than 180.

2.2. Bioaccumulation

A substance fulfils the very bioaccumulative criterion (vB-) when:

- the bioconcentration factor is greater than 5 000.
-

ANNEX XIV

LIST OF SUBSTANCES SUBJECT TO AUTHORISATION

—

ANNEX XV

DOSSIERS

I. INTRODUCTION AND GENERAL PROVISIONS

This Annex lays down general principles for preparing dossiers to propose and justify:

- harmonised classification and labelling of CMRs, respiratory sensitisers and other effects,
- the identification of PBTs, vPvBs, or a substance of equivalent concern,
- restrictions of the manufacture, placing on the market or use of a substance within the Community.

The relevant parts of Annex I shall be used for the methodology and format of any dossier according to this Annex.

For all dossiers any relevant information from registration dossiers shall be considered and other available information may be used. For hazard information which has not been previously submitted to the Agency, a robust study summary shall be included in the dossier.

II. CONTENT OF DOSSIERS

1. **Dossier for harmonised classification and labelling for CMRs, respiratory sensitisers and other effects***Proposal*

The proposal shall include the identity of the substance(s) concerned and the harmonised classification and labelling proposed.

Justification

A comparison of the available information with the criteria for CMRs, respiratory sensitisers and other effects on a case by case basis in Directive 67/548/EEC according to the relevant parts of Section 1 of Annex I shall be completed and documented in the format set out in Part B of the Chemical Safety Report in Annex I.

Justification for other effects at Community Level

Justification shall be provided that there is a need for action demonstrated at Community Level.

2. **Dossier for the identification of a substance as a CMR, PBT, vPvB or a substance of equivalent concern according to Article 59***Proposal*

The proposal shall include the identity of substance(s) concerned and whether it is proposed to be identified as a CMR according to Article 57(a), (b) or (c), a PBT according to Article 57(d), a vPvB according to Article 57(e), or a substance of equivalent concern according to Article 57(f).

Justification

A comparison of the available information with the criteria in Annex XIII for PBT according to Article 57(d), and vPvBs according to Article 57(e), or an assessment of the hazards and a comparison with Article 57(f), according to the relevant parts of Sections 1 to 4 of Annex I shall be completed. This shall be documented in the format set out in Part B of the Chemical Safety Report in Annex I.

Information on exposures, alternative substances and risks

The available use and exposure information and information on alternative substances and techniques shall be provided.

3. Dossiers for restrictions proposal

Proposal

The proposal shall include the identity of the substance and the restriction(s) proposed for the manufacture, placing on the market or use(s) and a summary of the justification.

Information on hazard and risk

The risks to be addressed with the restriction shall be described based on an assessment of the hazard and risks according to the relevant parts of Annex I and shall be documented in the format set out in Part B of that Annex for the Chemical Safety Report.

Evidence shall be provided that implemented risk management measures (including those identified in registrations under Articles 10 to 14) are not sufficient.

Information on alternatives

Available information on alternative substances and techniques shall be provided, including:

- information on the risks to human health and the environment related to the manufacture or use of the alternatives,
- availability, including the time scale,
- technical and economical feasibility.

Justification for Restrictions at Community Level

Justification shall be provided that:

- action is required on a Community-wide basis,
- a restriction is the most appropriate Community wide measure which shall be assessed using the following criteria:
 - (i) effectiveness: the restriction must be targeted to the effects or exposures that cause the risks identified, capable of reducing these risks to an acceptable level within a reasonable period of time and proportional to the risk;
 - (ii) practicality: the restriction must be implementable, enforceable and manageable;
 - (iii) monitorability: it must be possible to monitor the result of the implementation of the proposed restriction.

Socio-economic assessment

The socio-economic impacts of the proposed restriction may be analysed with reference to Annex XVI. To this end, the net benefits to human health and the environment of the proposed restriction may be compared to its net costs to manufacturers, importers, downstream users, distributors, consumers and society as a whole.

Information on stakeholder consultation

Information on any consultation of stakeholders and how their views have been taken into account shall be included in the dossier.

ANNEX XVI

SOCIO-ECONOMIC ANALYSIS

This Annex outlines the information that may be addressed by those submitting a socio-economic analysis (SEA) with an application for authorisation, as specified in Article 62(5)(a), or in connection with a proposed restriction, as specified in Article 69(6)(b).

The Agency shall prepare guidance for the preparation of SEAs. SEAs, or contributions to them, shall be submitted in the format specified by the Agency in accordance with Article 111.

However, the level of detail and scope of the SEA, or contributions to them, shall be the responsibility of the applicant for authorisation, or, in the case of a proposed restriction, the interested party. The information provided can address the socio-economic impacts at any level.

An SEA may include the following elements:

- impact of a granted or refused authorisation on the applicant(s), or, in the case of a proposed restriction, the impact on industry (e.g. manufacturers and importers). The impact on all other actors in the supply chain, downstream users and associated businesses in terms of commercial consequences such as impact on investment, research and development, innovation, one-off and operating costs (e.g. compliance, transitional arrangements, changes to existing processes, reporting and monitoring systems, installation of new technology, etc.) taking into account general trends in the market and technology,
- impacts of a granted or refused authorisation, or a proposed restriction, on consumers. For example, product prices, changes in composition or quality or performance of products, availability of products, consumer choice, as well as effects on human health and the environment to the extent that these affect consumers,
- social implications of a granted or refused authorisation, or a proposed restriction. For example job security and employment,
- availability, suitability, and technical feasibility of alternative substances and/or technologies, and economic consequences thereof, and information on the rates of, and potential for, technological change in the sector(s) concerned. In the case of an application for authorisation, the social and/or economic impacts of using any available alternatives,
- wider implications on trade, competition and economic development (in particular for SMEs and in relation to third countries) of a granted or refused authorisation, or a proposed restriction. This may include consideration of local, regional, national or international aspects,
- in the case of a proposed restriction, proposals for other regulatory or non-regulatory measures that could meet the aim of the proposed restriction (this shall take account of existing legislation). This should include an assessment of the effectiveness and the costs linked to alternative risk management measures,
- in the case of a proposed restriction or refused authorisation, the benefits for human health and the environment as well as the social and economic benefits of the proposed restriction. For example, worker health, environmental performance and the distribution of these benefits, for example, geographically, population groups,
- an SEA may also address any other issue that is considered to be relevant by the applicant(s) or interested party.

—

ANNEX XVII

RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
<p>1. Polychlorinated terphenyls (PCTs)</p> <p>— Preparations, including waste oils, with a PCT content higher than 0,005 % by weight.</p>	<p>1. Shall not be used. However, the following use of equipment, installations and fluids which were in service on 30 June 1986 shall continue to be permitted until they are disposed of or reach the end of their service life:</p> <p>(a) closed-system electrical equipment transformers, resistors and inductors;</p> <p>(b) large condensers (≥ 1 kg total weight);</p> <p>(c) small condensers;</p> <p>(d) heat-transmitting fluids in closed-circuit heat-transfer installations;</p> <p>(e) hydraulic fluids for underground mining equipment.</p> <p>2. The Member State may, for reasons of protection of human health and the environment, prohibit the use of equipment, installations and fluids covered by paragraph 1 before they are disposed of or reach the end of their service life.</p> <p>3. The placing on the second-hand market of equipment, plant and fluids covered by paragraph 1 which are not intended for disposal shall be prohibited.</p> <p>4. Where the Member State considers that it is not possible for technical reasons to use substitute articles, it may permit the use of PCTs and preparations thereof where the latter are solely intended, in the normal conditions of maintenance of equipment, to supplement the level of liquids containing PCTs in properly functioning existing installations purchased before 1 October 1985.</p> <p>5. The Member State may, provided prior notification stating the reasons is sent to the Commission, grant derogations from the ban on the placing on the market and use of primary and intermediate substances or preparations, in so far as they consider that these derogations have no deleterious effects on human health and the environment.</p> <p>6. Without prejudice to the implementation of other Community provisions relating to the labelling of dangerous substances and preparations, equipment and installations containing PCTs must also display instructions concerning the disposal of PCTs and the maintenance and use of equipment and installations containing them. These instructions must be capable of being read horizontally when the object containing the PCTs is installed in the normal way. The inscription must stand out clearly from its background and shall be in a language which is understood in the territory where it is being used.</p>

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
<p>2. Chloro-1-ethylene (monomer vinyl chloride) CAS No 75-01-4 EINECS No 200-831-0</p>	<p>Shall not be used as aerosol propellant for any use.</p>
<p>3. Liquid substances or preparations, which are regarded as dangerous according to the definitions in Council Directive 67/548/EEC and Directive 1999/45/EC.</p>	<p>1. Shall not be used in:</p> <ul style="list-style-type: none"> — ornamental objects, intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays, — tricks and jokes, — games for one or more participants, or any object intended to be used as such, even with ornamental aspects. <p>2. Without prejudice to paragraph 1, substances and preparations which:</p> <ul style="list-style-type: none"> — present an aspiration hazard and are labelled with R65, and — can be used as fuel in decorative lamps, and — are placed on the market in packaging of a capacity of 15 litres or less, <p>shall not contain a colouring agent, unless required for fiscal reasons, or perfume or both.</p> <p>3. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and preparations, the packaging of substances and preparations covered by paragraph 2, where intended for use in lamps, must be marked legibly and indelibly as follows:</p> <p>'Keep lamps filled with this liquid out of the reach of children'.</p>
<p>4. Tris (2,3 dibromopropyl) phosphate CAS No 126-72-7</p>	<p>Shall not be used in textile articles, such as garments, undergarments and linen, intended to come into contact with the skin.</p>
<p>5. Benzene CAS No 71-43-2 EINECS No 200-753-785</p>	<p>1. Not permitted in toys or parts of toys as placed on the market where the concentration of benzene in the free state is in excess of 5 mg/kg of the weight of the toy or part of toy.</p> <p>2. Shall not be used in concentrations equal to, or greater than, 0,1 % by mass in substances or preparations placed on the market.</p> <p>3. However, paragraph 2 shall not apply to:</p> <ul style="list-style-type: none"> (a) motor fuels which are covered by Directive 98/70/EC; (b) substances and preparations for use in industrial processes not allowing for the emission of benzene in quantities in excess of those laid down in existing legislation; (c) waste covered by Council Directive 91/689/EEC of 12 December 1991 on hazardous waste ⁽¹⁾ and Directive 2006/12/EC.

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
<p>6. Asbestos fibres</p> <p>(a) Crocidolite CAS No 12001-28-4</p> <p>(b) Amosite CAS No 12172-73-5</p> <p>(c) Anthophyllite CAS No 77536-67-5</p> <p>(d) Actinolite CAS No 77536-66-4</p> <p>(e) Tremolite CAS No 77536-68-6</p> <p>(f) Chrysotile (?) CAS No 12001-29-5 CAS No 132207-32-0</p>	<p>1. The placing on the market and use of these fibres and of articles containing these fibres added intentionally shall be prohibited.</p> <p>However, Member States may except the placing on the market and use of diaphragms containing chrysotile (point (f)) for existing electrolysis installations until they reach the end of their service life, or until suitable asbestos-free substitutes become available, whichever is the sooner. The Commission will review this derogation before 1 January 2008.</p> <p>2. The use of articles containing asbestos fibres referred to in paragraph 1 which were already installed and/or in service before 1 January 2005 shall continue to be permitted until they are disposed of or reach the end of their service life. However, Member States may, for reasons of protection of human health, prohibit the use of such articles before they are disposed of or reach the end of their service life.</p> <p>Member States shall not permit the introduction of new applications for chrysotile asbestos on their territories.</p> <p>3. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of dangerous substances and preparations, the placing on the market and use of these fibres and of articles containing these fibres, as permitted according to the preceding derogations, shall be permitted only if the articles bear a label in accordance with the provisions of Appendix 7 to this Annex.</p>
<p>7. Tris(aziridinyl)phosphin oxide CAS No 5455-55-1</p>	<p>Shall not be used in textile articles, such as garments, undergarments and linen, intended to come into contact with the skin.</p>
<p>8. Polybromobiphenyls; Polybrominatedbiphenyls (PBB) CAS No 59536-65-1</p>	
<p>9. Soap bark powder (<i>Quillaja saponaria</i>) and its derivatives containing saponines</p> <p>Powder of the roots of <i>Helleborus viridis</i> and <i>Helleborus niger</i></p> <p>Powder of the roots of <i>Veratrum album</i> and <i>Veratrum nigrum</i></p> <p>Benzidine and/or its derivatives CAS No 92-87-5 EINECS No 202-199-1</p> <p><i>o</i>-Nitrobenzaldehyde CAS No 552-89-6</p> <p>Wood powder</p>	<p>1. Shall not be used in jokes and hoaxes or in objects intended to be used as such, for instance as a constituent of sneezing powder and stink bombs.</p> <p>2. However, paragraph 1 does not apply to stink bombs containing not more than 1,5 ml of liquid.</p>
<p>10. Ammonium sulphide CAS No 12135-76-1</p> <p>Ammonium hydrogen sulphide CAS No 12124-99-1</p> <p>Ammonium polysulphide CAS No 9080-17-5 EINECS No 232-989-1</p>	

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
11. Volatile esters of bromoacetic acids: Methyl bromoacetate CAS No 96-32-2 EINECS No 202-499-2 Ethyl bromoacetate CAS No 105-36-2 EINECS No 203-290-9 Propyl bromoacetate CAS No 35223-80-4 Butyl bromoacetate	
12. 2-Naphthylamine CAS No 91-59-8 EINECS No 202-080-4 and its salts 13. Benzidine CAS No 92-87-5 EINECS No 202-199-1 and its salts 14. 4-Nitrobiphenyl CAS No 92-93-3 EINECS No 202-204-7 15. 4-Aminobiphenyl xenylamine CAS No 92-67-1 EINECS No 202-177-1 and its salts	1. Shall not be used in concentrations equal to or greater than 0,1 % by weight in substances and preparations placed on the market. However, this provision shall not apply to waste containing one or more of these substances and covered by Directives 91/689/EEC and 2006/12/EC. 2. Such substances and preparations shall not be sold to the general public. 3 Without prejudice to the application of other Community provisions on the classification, packaging and labelling of dangerous substances and preparations, the packaging of such preparations shall be legible and indelibly marked as follows: 'Restricted to professional users'.
16. Lead carbons: (a) Neutral anhydrous carbonate (PbCO ₃) CAS No 598-63-0 EINECS No 209-943-4 (b) Trilead-bis(carbonate)-dihydroxide 2 Pb CO ₃ -Pb (OH) ₂ CAS No 1319-46-6 EINECS No 215-290-6	Shall not be used as substances and a constituent of preparations intended for use as paints, except for the restoration and maintenance of works of art and historic buildings and their interiors, where Member States wish to permit this on their territory, in accordance with the provisions of ILO Convention 13 on the use of white lead and sulphates of lead in paint.
17. Lead sulphates (a) PbSO ₄ (1:1) CAS No 7446-14-2 EINECS No 231-198-9 (b) Pb _x SO ₄ CAS No 15739-80-7 EINECS No 239-831-0	

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
18. Mercury compounds	<p>1. Shall not be used as substances and constituents of preparations intended for use:</p> <p>(a) to prevent the fouling by micro-organisms, plants or animals of:</p> <ul style="list-style-type: none"> — the hulls of boats, — cages, floats, nets and any other appliances or equipment used for fish or shellfish farming, — any totally or partly submerged appliances or equipment; <p>(b) in the preservation of wood;</p> <p>(c) in the impregnation of heavy-duty industrial textiles and yarn intended for their manufacture;</p> <p>(d) in the treatment of industrial waters, irrespective of their use.</p> <p>2. The placing on the market of batteries and accumulators, containing more than 0,0005 % of mercury by weight, including in those cases where these batteries and accumulators are incorporated into appliances shall be prohibited. Button cells and batteries composed of button cells with a mercury content of no more than 2 % by weight shall be exempted from this prohibition.</p>
19. Arsenic compounds	<p>1. Shall not be used as substances and constituents of preparations intended for use:</p> <p>(a) to prevent the fouling by micro-organisms, plants or animals of:</p> <ul style="list-style-type: none"> — the hulls of boats, — cages, floats, nets and any other appliances or equipment used for fish or shellfish farming, — any totally or partly submerged appliances or equipment; <p>(b) in the preservation of wood. Furthermore, wood so treated shall not be placed on the market;</p> <p>(c) however, by way of derogation:</p> <p>(i) Relating to the substances and preparations in the preservation of wood: these may only be used in industrial installations using vacuum or pressure to impregnate wood if they are solutions of inorganic compounds of the copper, chromium, arsenic (CCA) type C. Wood so treated shall not be placed on the market before fixation of the preservative is completed.</p> <p>(ii) Relating to wood treated with CCA solutions in industrial installations according to point (i): this may be placed on the market for professional and industrial use provided that the structural integrity of the wood is required for human or livestock safety and skin contact by the general public during its service life is unlikely:</p>

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<ul style="list-style-type: none"> — as structural timber in public and agricultural buildings, office buildings, and industrial premises, — in bridges and bridgework, — as constructional timber in freshwater areas and brackish waters e.g. jetties and bridges, — as noise barriers, — in avalanche control, — in highway safety fencing and barriers, — as debarked round conifer livestock fence posts, — in earth retaining structures, — as electric power transmission and telecommunications poles, — as underground railway sleepers. <p>Without prejudice to the application of other Community provisions on the classification, packaging and labelling of dangerous substances and preparations, all treated wood placed on the market shall be individually labelled 'For professional and industrial installation and use only, contains arsenic'. In addition, all wood placed on the market in packs shall also bear a label stating 'Wear gloves when handling this wood. Wear a dust mask and eye protection when cutting or otherwise crafting this wood. Waste from this wood shall be treated as hazardous by an authorised undertaking'.</p> <p>(iii) Treated wood referred to under points (i) and (ii) shall not be used:</p> <ul style="list-style-type: none"> — in residential or domestic constructions, whatever the purpose, — in any application where there is a risk of repeated skin contact, — in marine waters, — for agricultural purposes other than for livestock fence posts and structural uses in accordance with point (ii), — in any application where the treated wood may come into contact with intermediate or finished products intended for human and/or animal consumption. <p>2. Shall not be used as substances and constituents of preparations intended for use in the treatment of industrial waters, irrespective of their use.</p>

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
20. Organostannic compounds	<p>1. Shall not be placed on the market for use as substances and constituents of preparations when acting as biocides in free association paint.</p> <p>2. Shall not be placed on the market or used as substances and constituents of preparations which act as biocides to prevent the fouling by micro-organisms, plants or animals of:</p> <p>(a) all craft irrespective of their length intended for use in marine, coastal, estuarine and inland waterways and lakes;</p> <p>(b) cages, floats, nets and any other appliances or equipment used for fish or shellfish farming;</p> <p>(c) any totally or partly submerged appliance or equipment.</p> <p>3. Shall not be used as substances and constituents of preparations intended for use in the treatment of industrial waters.</p>
21. Di- μ -oxo-di-n-butylstanniohydroxyborane dibutyltin hydrogen borate $C_8H_{19}BO_3S_n$ (DBB) CAS No 75113-37-0 ELINCS No 401-040-5	Shall be prohibited in a concentration equal to or greater than 0,1 % in substances and constituents of preparations placed on the market. However, this provision shall not apply to this substance (DBB) or preparations containing it if these are intended solely for conversion into finished articles, among which this substance will no longer feature in a concentration equal to or greater than 0,1 %.
22. Pentachlorophenol CAS No 87-86-5 EINECS No 201-778-6 and its salts and esters	<p>1. Shall not be used in a concentration equal to or greater than 0,1 % by mass in substances or preparations placed on the market.</p> <p>2. Transitional provisions:</p> <p>By way of derogation until 31 December 2008 France, Ireland, Portugal, Spain and the United Kingdom may chose not to apply this provision to substances and preparations intended for use in industrial installations not permitting the emission and/or discharge of pentachlorophenol (PCP) in quantities greater than those prescribed by existing legislation:</p> <p>(a) in the treatment of wood.</p> <p>However, treated wood shall not be used:</p> <ul style="list-style-type: none"> — inside buildings whether for decorative purposes or not, whatever their purpose (residence, employment, leisure), — for the manufacture and re-treatment of: <ul style="list-style-type: none"> (i) containers intended for growing purposes; (ii) packaging that may come into contact with raw materials, intermediate or finished products destined for human and/or animal consumption; (iii) other materials that may contaminate the products mentioned in (i) and (ii);

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
<p>23. Cadmium CAS No 7440-43-9 EINECS No 231-152-8 and its compounds</p>	<p>(b) in the impregnation of fibres and heavy-duty textiles not intended in any case for clothing or for decorative furnishings;</p> <p>(c) by way of special exception, Member States may on a case-by-case basis, permit on their territory specialised professionals to carry out <i>in situ</i> and for buildings of cultural, artistic and historical interest, or in emergencies, a remedial treatment of timber and masonry infected by dry rot fungus (<i>Serpula lacrymans</i>) and cubic rot fungi.</p> <p>In any case:</p> <p>(a) Pentachlorophenol used alone or as a component of preparations employed within the framework of the above exceptions must have a total hexachlorodibenzo-paradoxin (HCDD) content of not more than two parts per million (ppm);</p> <p>(b) these substances and preparations shall not:</p> <ul style="list-style-type: none"> — be placed on the market except in packages of 20 litres or more; — be sold to the general public. <p>3. Without prejudice to the implementation of other Community provisions concerning the classification, packaging and labelling of dangerous substances and preparations, the packaging of substances and preparations covered by paragraphs 1 and 2 shall be marked clearly and indelibly:</p> <p>'Reserved for industrial and professional use'. This provision shall not apply to waste covered by Directives 91/689/EEC and 2006/12/EC.</p> <p>1. Shall not be used to give colour to finished articles manufactured from the substances and preparations listed below:</p> <p>(a) — polyvinyl chloride (PVC) [3904 10] [3904 21] [3904 22] ⁽³⁾, — polyurethane (PUR) [3909 50] ⁽³⁾, — low-density polyethylene (ld PE), with the exception of low-density polyethylene used for the production of coloured masterbatch [3901 10] ⁽³⁾, — cellulose acetate (CA) [3912 11] [3912 12] ⁽³⁾, — cellulose acetate butyrate (CAB) [3912 11] [3912 12] ⁽³⁾, — epoxy resins [3907 30] ⁽³⁾, — melamine — formaldehyde (MF) resins [3909 20] ⁽³⁾, — urea — formaldehyde (UF) resins [3909 10] ⁽³⁾, — unsaturated polyesters (UP) [3907 91] ⁽³⁾, — polyethylene terephthalate (PET) [3907 60] ⁽³⁾, — polybutylene terephthalate (PBT) ⁽³⁾, — transparent/general-purpose polystyrene [3903 11] [3903 19] ⁽³⁾, — acrylonitrile methylmethacrylate (AMMA) ⁽³⁾, — cross-linked polyethylene (VPE) ⁽³⁾, — high-impact polystyrene ⁽³⁾, — polypropylene (PP) [3902 10] ⁽³⁾;</p>

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<p>(b) paints [3208] [3209] ⁽³⁾.</p> <p>However, if the paints have a high zinc content, their residual concentration of cadmium shall be as low as possible and shall at all events not exceed 0,1 % by mass.</p> <p>In any case, whatever their use or intended final purpose, finished articles or components of articles manufactured from the substances and preparations listed above coloured with cadmium shall not be placed on the market if their cadmium content (expressed as Cd metal) exceeds 0,01 % by mass of the plastic material.</p> <p>2. However, paragraph 1 does not apply to articles to be coloured for safety reasons.</p> <p>3. Shall not be used to stabilise the finished articles listed below manufactured from polymers or copolymers of vinyl chloride:</p> <ul style="list-style-type: none"> — packaging materials (bags, containers, bottles, lids) [3923 29 10] [3920 41] [3920 42] ⁽³⁾, — office or school supplies [3926 10] ⁽³⁾, — fittings for furniture, coachwork or the like [3926 30] ⁽³⁾, — articles of apparel and clothing accessories (including gloves) [3926 20] ⁽³⁾, — floor and wall coverings [3918 10] ⁽³⁾, — impregnated, coated, covered or laminated textile fabrics [5903 10] ⁽³⁾, — imitation leather [4202] ⁽³⁾, — gramophone records [8524 10] ⁽³⁾, — tubes and pipes and their fittings [3917 23] ⁽³⁾, — swing doors ⁽³⁾, — vehicles for road transport (interior, exterior, underbody) ⁽³⁾, — coating of steel sheet used in construction or in industry ⁽³⁾, — insulation for electrical wiring ⁽³⁾. <p>In any case, whatever their use or intended final purpose, the placing on the market of the above finished articles or components of articles manufactured from polymers or copolymers of vinyl chloride, stabilised by substances containing cadmium shall be prohibited, if their cadmium content (expressed as Cd metal) exceeds 0,01 % by mass of the polymer.</p> <p>4. However, paragraph 3 does not apply to finished articles using cadmium-based stabilisers for safety reasons.</p>

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<p>5. Within the meaning of this Regulation, 'cadmium plating' means any deposit or coating of metallic cadmium on a metallic surface.</p> <p>Shall not be used for cadmium plating metallic articles or components of the articles used in the sectors/applications listed below:</p> <p>(a) equipment and machinery for:</p> <ul style="list-style-type: none"> — food production [8210] [8417 20] [8419 81] [8421 11] [8421 22] [8422] [8435] [8437] [8438] [8476 11] ⁽³⁾, — agriculture [8419 31] [8424 81] [8432] [8433] [8434] [8436] ⁽³⁾, — cooling and freezing [8418] ⁽³⁾, — printing and book-binding [8440] [8442] [8443] ⁽³⁾; <p>(b) equipment and machinery for the production of:</p> <ul style="list-style-type: none"> — household goods [7321] [8421 12] [8450] [8509] [8516] ⁽³⁾, — furniture [8465] [8466] [9401] [9402] [9403] [9404] ⁽³⁾, — sanitary ware [7324] ⁽³⁾, — central heating and air conditioning plant [7322] [8403] [8404] [8415] ⁽³⁾. <p>In any case, whatever their use or intended final purpose, the placing on the market of cadmium-plated articles or components of such articles used in the sectors/applications listed in points (a) and (b) above and of articles manufactured in the sectors listed in point (b) above shall be prohibited.</p> <p>6. The provisions referred to in paragraph 5 are also applicable to cadmium-plated articles or components of such articles when used in the sectors/applications listed in points (a) and (b) below and to articles manufactured in the sectors listed in (b) below:</p> <p>(a) equipment and machinery for the production of:</p> <ul style="list-style-type: none"> — paper and board [8419 32] [8439] [8441] ⁽³⁾, — textiles and clothing [8444] [8445] [8447] [8448] [8449] [8451] [8452] ⁽³⁾; <p>(b) equipment and machinery for the production of:</p> <ul style="list-style-type: none"> — industrial handling equipment and machinery [8425] [8426] [8427] [8428] [8429] [8430] [8431] ⁽³⁾, — road and agricultural vehicles [chapter 87] ⁽³⁾, — rolling stock [chapter 86] ⁽³⁾, — vessels [chapter 89] ⁽³⁾.

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<p>7. However, the restrictions in paragraphs 5 and 6 do not apply to:</p> <ul style="list-style-type: none"> — articles and components of the articles used in the aeronautical, aerospace, mining, offshore and nuclear sectors whose applications require high safety standards and in safety devices in road and agricultural vehicles, rolling stock and vessels, — electrical contacts in any sector of use, on account of the reliability required of the apparatus on which they are installed. <p>Owing to the development of knowledge and techniques in respect of substitutes less dangerous than cadmium and its compounds, the Commission shall, in consultation with the Member States, assess the situation at regular intervals in accordance with the procedure laid down in Article 133(3) of this Regulation.</p>
<p>24. Monomethyl — tetrachlorodiphenyl methane Trade name: Ugilec 141 CAS No 76253-60-6</p>	<p>1. The placing on the market and use of this substance and of preparations and articles containing it shall be prohibited.</p> <p>2. By way of exception paragraph 1 shall not apply:</p> <p>(a) in the case of plant and machinery already in service on 18 June 1994 until such plant and machinery is disposed of.</p> <p>However, Member States may, on grounds of human health protection and environmental protection, prohibit within their territory the use of such plant or machinery before it is disposed of;</p> <p>(b) in the case of the maintenance of plant and machinery already in service within a Member State on 18 June 1994.</p> <p>3. The placing on the second-hand market of this substance, preparations containing this substance and plant/machinery containing this substance, shall be prohibited.</p>
<p>25. Monomethyl-dichloro-diphenyl methane Trade name: Ugilec 121, Ugilec 21; CAS No — unknown</p>	<p>The placing on the market and use of this substance and of preparations and articles containing it shall be prohibited.</p>
<p>26. Monomethyl-dibromo-diphenyl methane bromobenzylbromotoluene, mixture of isomers Trade name: DBBT CAS No 99688-47-8</p>	<p>The placing on the market and use of this substance and of preparations and articles containing it shall be prohibited.</p>
<p>27. Nickel CAS No 7440-02-0 EINECS No 231-111-4 and its compounds</p>	<p>1. Shall not be used:</p> <p>(a) in all post assemblies which are inserted into pierced ears and other pierced parts of the human body unless the rate of nickel release from such post assemblies is less than 0,2 µg/cm²/week (migration limit);</p> <p>(b) in articles intended to come into direct and prolonged contact with the skin such as:</p> <ul style="list-style-type: none"> — earrings, — necklaces, bracelets and chains, anklets, finger rings,

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<ul style="list-style-type: none"> — wrist-watch cases, watch straps and tighteners, — rivet buttons, tighteners, rivets, zippers and metal marks, when these are used in garments, — if the rate of nickel release from the parts of these articles coming into direct and prolonged contact with the skin is greater than 0,5 µg/cm²/week; <p>(c) in articles such as those listed in point (b) where these have a non-nickel coating unless such coating is sufficient to ensure that the rate of nickel release from those parts of such articles coming into direct and prolonged contact with the skin will not exceed 0,5 µg/cm²/week for a period of at least two years of normal use of the article.</p> <p>2. Articles which are the subject of paragraph 1, shall not be placed on the market unless they conform to the requirements set out in those points.</p> <p>3. The standards adopted by the European Committee for Standardisation (CEN) shall be used as the test methods for demonstrating the conformity of articles to paragraphs 1 and 2.</p>
<p>28. Substances which appear in Annex I to Directive 67/548/EEC classified as carcinogen category 1 or carcinogen category 2 and labelled at least as 'Toxic (T)' with risk phrase R 45: 'May cause cancer' or risk phrase R49: 'May cause cancer by inhalation', and listed as follows:</p> <p>Carcinogen category 1 listed in Appendix 1.</p> <p>Carcinogen category 2 listed in Appendix 2.</p>	<p>Without prejudice to the other parts of this Annex the following shall apply to entries 28 to 30:</p> <p>1. Shall not be used in substances and preparations placed on the market for sale to the general public in individual concentration equal to or greater than:</p> <ul style="list-style-type: none"> — either the relevant concentration specified in Annex I to Directive 67/548/EEC, or — the relevant concentration specified in Directive 1999/45/EC.
<p>29. Substances which appear in Annex I to Directive 67/548/EEC classified as mutagen category 1 or mutagen category 2 and labelled with risk phrase R46: 'May cause heritable genetic damage', and listed as follows:</p> <p>Mutagen category 1 listed in Appendix 3.</p> <p>Mutagen category 2 listed in Appendix 4.</p>	<p>Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and preparations, the packaging of such substances and preparations must be marked legibly and indelibly as follows:</p> <p>'Restricted to professional users'.</p>
<p>30. Substances which appear in Annex I to Directive 67/548/EEC classified as toxic to reproduction category 1 or toxic to reproduction category 2 and labelled with risk phrase R60: 'May impair fertility' and/or R61: 'May cause harm to the unborn child', and listed as follows:</p> <p>Toxic to reproduction category 1 listed in Appendix 5.</p> <p>Toxic to reproduction category 2 listed in Appendix 6.</p>	<p>2. By way of derogation, paragraph 1 shall not apply to:</p> <ul style="list-style-type: none"> (a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC; (b) cosmetic products as defined by Council Directive 76/768/EEC; (c) — motor fuels which are covered by Directive 98/70/EC, <ul style="list-style-type: none"> — mineral oil products intended for use as fuel in mobile or fixed combustion plants, — fuels sold in closed systems (e.g. liquid gas bottles); (d) artists' paints covered by Directive 1999/45/EC.

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
<p>31. (a) creosote; wash oil CAS No 8001-58-9 EINECS No 232-287-5</p> <p>(b) creosote oil; wash oil CAS No 61789-28-4 EINECS No 263-047-8</p> <p>(c) distillates (coal tar), naphthalene oils; naphthalene oil CAS No 84650-04-4 EINECS No 283-484-8</p> <p>(d) creosote oil, acenaphthene fraction; wash oil CAS No 90640-84-9 EINECS No 292-605-3</p> <p>(e) distillates (coal tar), upper; heavy anthracene oil CAS No 65996-91-0 EINECS No 266-026-1</p> <p>(f) anthracene oil CAS No 90640-80-5 EINECS No 292-602-7</p> <p>(g) tar acids, coal, crude; crude phenols CAS No 65996-85-2 EINECS No 266-019-3</p> <p>(h) creosote, wood CAS No 8021-39-4 EINECS No 232-419-1</p> <p>(i) low temperature tar oil, alkaline; extract residues (coal), low temperature coal tar alkaline CAS No 122384-78-5 EINECS No 310-191-5</p>	<p>1. Shall not be used as substances or in preparations in the treatment of wood. Furthermore, wood so treated shall not be placed on the market.</p> <p>2. However by way of derogation:</p> <p>(a) relating to the substances and preparations: these may be used for wood treatment in industrial installations or by professionals covered by Community legislation on the protection of workers for <i>in situ</i> retreatment only if they contain:</p> <p>(i) benzo[a]pyrene at a concentration of less than 0,005 % by mass;</p> <p>(ii) and water extractable phenols at a concentration of less than 3 % by mass.</p> <p>Such substances and preparations for use in wood treatment in industrial installations or by professionals:</p> <p>— may be placed on the market only in packaging of a capacity equal to or greater than 20 litres,</p> <p>— shall not be sold to consumers.</p> <p>Without prejudice to the application of other Community provisions on the classification, packaging and labelling of dangerous substances and preparations, the packaging of such substances and preparations shall be legibly and indelibly marked as follows:</p> <p>'For use in industrial installations or professional treatment only'.</p> <p>(b) relating to wood treated in industrial installations or by professionals according to point (a) which is placed on the market for the first time or retreated <i>in situ</i>: this is permitted for professional and industrial use only, e. g. on railways, in electric power transmission and telecommunications, for fencing, for agricultural purposes (e.g. stakes for tree support) and in harbours and waterways;</p> <p>(c) the prohibition in paragraph 1 on the placing on the market shall not apply to wood which has been treated with substances listed in entry 31(a) to (i) before 31 December 2002 and is placed on the second-hand market for re-use.</p> <p>3. However, treated wood referred to under paragraph 2 (b) and (c) shall not be used:</p> <p>— inside buildings, whatever their purpose,</p> <p>— in toys,</p>

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<ul style="list-style-type: none"> — in playgrounds, — in parks, gardens, and outdoor recreational and leisure facilities where there is a risk of frequent skin contact, — in the manufacture of garden furniture such as picnic tables, — for the manufacture and use and any re-treatment of: <ul style="list-style-type: none"> — containers intended for growing purposes, — packaging that may come into contact with raw materials, intermediate or finished products destined for human and/or animal consumption, — other materials which may contaminate the articles mentioned above.
<p>32. Chloroform CAS No 67-66-3 EINECS No 200-663-8</p> <p>33. Carbon tetrachloride-tetrachloromethane CAS No 56-23-5 EINECS No 200-262-8</p> <p>34. 1,1,2 Trichloroethane CAS No 79-00-5 EINECS No 201-166-9</p> <p>35. 1,1,2,2 Tetrachloroethane CAS No 79-34-5 EINECS No 201-197-8</p> <p>36. 1,1,1,2 Tetrachloroethane CAS No 630-20-6</p> <p>37. Pentachloroethane CAS No 76-01-7 EINECS No 200-925-1</p> <p>38. 1,1 Dichloroethylene CAS No 75-35-4 EINECS No 200-864-0</p> <p>39. 1,1,1 Trichloroethane, methyl chloroform CAS No 71-55-6 EINECS No 200-756-3</p>	<p>1. Shall not be used in concentrations equal to or greater than 0,1 % by weight in substances and preparations placed on the market for sale to the general public and/or in diffusive applications such as in surface cleaning and cleaning of fabrics.</p> <p>2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of dangerous substances and preparations, the packaging of such substances and preparations containing them in concentrations equal to or greater than 0,1 % shall be legible and indelibly marked as follows:</p> <p>'For use in industrial installations only'.</p> <p>By way of derogation this provision shall not apply to:</p> <p>(a) medicinal or veterinary products as defined by Directive 2001/82/EC and Directive 2001/83/EC;</p> <p>(b) cosmetic products as defined by Directive 76/768/EEC.</p>
<p>40. Substances meeting the criteria of flammability in Directive 67/548/EEC and classified as flammable, highly flammable or extremely flammable regardless of whether they appear in Annex I to that Directive or not.</p>	<p>1 Shall not be used on their own or in the form of preparations in aerosol generators that are placed on the market for the general public for entertainment and decorative purposes such as the following:</p> <ul style="list-style-type: none"> — metallic glitter intended mainly for decoration, — artificial snow and frost, — 'whoopie' cushions, — silly string aerosols,

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<ul style="list-style-type: none"> — imitation excrement, — horn for parties, — decorative flakes and foams, — artificial cobwebs, — stink bombs, — etc. <p>2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of dangerous substances, the following words must appear legibly and indelibly on the packaging of aerosol generators referred to above:</p> <p>'For professional users only'.</p> <p>3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol generators referred to in Article 9a of Council Directive 75/324/EEC of 20 May 1975 on the approximation of the laws of the Member States relating to aerosol dispensers (*).</p> <p>4. The articles referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.</p>
<p>41. Hexachloroethane CAS No 67-72-1 EINECS No 200-6664</p>	<p>Shall not be used in the manufacturing or processing of non-ferrous metals.</p>
<p>42. Alkanes, C₁₀-C₁₃, chloro (short-chain chlorinated paraffins) (SCCPs) EINECS No 287-476-5</p>	<p>Shall not be placed on the market for use as substances or as constituents of other substances or preparations in concentrations higher than 1 %:</p> <ul style="list-style-type: none"> — in metalworking, — for fat liquoring of leather.
<p>43. Azocolourants</p>	<p>1. Azodyes which, by reductive cleavage of one or more azo groups, may release one or more of the aromatic amines listed in Appendix 8, in detectable concentrations, i. e. above 30 ppm in the finished articles or in the dyed parts thereof, according to the testing methods listed in Appendix 10, shall not be used in textile and leather articles which may come into direct and prolonged contact with the human skin or oral cavity, such as:</p> <ul style="list-style-type: none"> — clothing, bedding, towels, hairpieces, wigs, hats, nappies and other sanitary items, sleeping bags, — footwear, gloves, wristwatch straps, handbags, purses/wallets, briefcases, chair covers, purses worn round the neck, — textile or leather toys and toys which include textile or leather garments,

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<p>— yarn and fabrics intended for use by the final consumer.</p> <p>2. Furthermore, the textile and leather articles referred to in paragraph 1 above shall not be placed on the market unless they conform to the requirements set out in that paragraph.</p> <p>3. Azodyes, which are contained in Appendix 9, 'List of azodyes', shall not be placed on the market or used for colouring textile and leather articles as a substance or constituent of preparations in concentrations higher than 0,1 % by mass.</p> <p>4. The Commission shall, in the light of new scientific knowledge, review the provisions on azocolourants.</p>
44. Diphenylether, pentabromo derivative $C_{12}H_5Br_5O$	<p>1. Shall not be placed on the market or used as a substance or as a constituent of preparations in concentrations higher than 0,1 % by mass.</p> <p>2. Articles may not be placed on the market if they, or flame-retarded parts thereof, contain this substance in concentrations higher than 0,1 % by mass.</p>
45. Diphenylether, octabromo derivative $C_{12}H_2Br_8O$	<p>1. Shall not be placed on the market or used as a substance or as a constituent of substances or of preparations in concentrations higher than 0,1 % by mass.</p> <p>2. Articles may not be placed on the market if they, or flame-retardant parts thereof, contain this substance in concentrations higher than 0,1 % by mass.</p>
46. (a) Nonylphenol $C_6H_4(OH)C_9H_{19}$ (b) Nonylphenol ethoxylate $(C_2H_4O)_n C_{15}H_{24}O$	<p>Shall not be placed on the market or used as a substance or constituent of preparations in concentrations equal or higher than 0,1 % by mass for the following purposes:</p> <p>(1) industrial and institutional cleaning except:</p> <ul style="list-style-type: none"> — controlled closed dry cleaning systems where the washing liquid is recycled or incinerated, — cleaning systems with special treatment where the washing liquid is recycled or incinerated; <p>(2) domestic cleaning;</p> <p>(3) textiles and leather processing except:</p> <ul style="list-style-type: none"> — processing with no release into waste water, — systems with special treatment where the process water is pre-treated to remove the organic fraction completely prior to biological waste water treatment (degreasing of sheepskin); <p>(4) emulsifier in agricultural teat dips;</p> <p>(5) metal working except:</p> <ul style="list-style-type: none"> — uses in controlled closed systems where the washing liquid is recycled or incinerated; <p>(6) manufacturing of pulp and paper;</p> <p>(7) cosmetic products;</p> <p>(8) other personal care products except:</p> <ul style="list-style-type: none"> — spermicides; <p>(9) co-formulants in pesticides and biocides.</p>

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
47. Cement	<p>1. Cement and cement-containing preparations shall not be used or placed on the market, if they contain, when hydrated, more than 0,0002 % soluble chromium VI of the total dry weight of the cement.</p> <p>2. If reducing agents are used, then without prejudice to the application of other Community provisions on the classification, packaging and labelling of dangerous substances and preparations, the packaging of cement or cement-containing preparations shall be legibly and indelibly marked with information on the packing date, as well as on the storage conditions and the storage period appropriate to maintaining the activity of the reducing agent and to keeping the content of soluble chromium VI below the limit indicated in paragraph 1.</p> <p>3. By way of derogation, paragraphs 1 and 2 shall not apply to the placing on the market for, and use in, controlled closed and totally automated processes in which cement and cement-containing preparations are handled solely by machines and in which there is no possibility of contact with the skin.</p>
48. Toluene CAS No 108-88-3	<p>Shall not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0,1 % by mass in adhesives and spray paints intended for sale to the general public.</p> <p>Member States shall apply these measures from 15 June 2007.</p>
49. Trichlorobenzene CAS No 120-82-1	<p>Shall not be placed on the market or used as a substance or constituent of preparations in a concentration equal to or higher than 0,1 % by mass for all uses except:</p> <ul style="list-style-type: none"> — as an intermediate of synthesis, or — as a process solvent in closed chemical applications for chlorination reactions, or — in the manufacture of 1,3,5 — trinitro — 2,4,6 — triaminobenzene (TATB). <p>Member States shall apply these measures from 15 June 2007.</p>
50. Polycyclic-aromatic hydrocarbons (PAH) 1. Benzo(a)pyrene (BaP) CAS No 50-32-8 2. Benzo(e)pyrene (BeP) CAS No 192-97-2 3. Benzo(a)anthracene (BaA) CAS No 56-55-3 4. Chrysen (CHR) CAS No 218-01-9 5. Benzo(b)fluoranthene (BbFA) CAS No 205-99-2 6. Benzo(j)fluoranthene (BjFA) CAS No 205-82-3 7. Benzo(k)fluoranthene (BkFA) CAS No 207-08-9 8. Dibenzo(a, h)anthracene (DBAhA) CAS No 53-70-3	<p>1. Extender oils shall not be placed on the market and used for the production of tyres or parts of tyres, if they contain:</p> <ul style="list-style-type: none"> — more than 1 mg/kg BaP, or — more than 10 mg/kg of the sum of all listed PAHs. <p>These limits are regarded as kept, if the polycyclic aromatics (PCA) extract is less than 3 % by mass, as measured by the Institute of Petroleum standard IP346: 1998 (Determination of PCA in unused lubricating base oils and asphaltene free petroleum fractions — Dimethyl sulphoxide extraction refractive index method), provided that compliance with the limit values of BaP and of the listed PAHs, as well as the correlation of the measured values with the PCA extract, is controlled by the manufacturer or importer every six months or after each major operational change, whichever is earlier.</p>

Designation of the substance, of the groups of substances or of the preparation	Conditions of restriction
	<p>2. Furthermore, the tyres and treads for retreading manufactured after 1 January 2010 may not be placed on the market if they contain extender oils exceeding the limits indicated in paragraph 1.</p> <p>These limits are regarded as kept, if the vulcanised rubber compounds do not exceed the limit of 0,35 % Bay protons as measured and calculated by ISO 21461 (Rubber vulcanised — Determination of aromaticity of oil in vulcanised rubber compounds).</p> <p>3. By way of derogation, paragraph 2 shall not apply to retreaded tyres if their tread does not contain extender oils exceeding the limits referred to in paragraph 1.</p> <p>4. Member States shall apply these measures from 1 January 2010.</p>
<p>51. The following phthalates (or other CAS- and EINECS numbers covering the substance): bis (2-ethylhexyl) phthalate (DEHP) CAS No 117-81-7 Einecs No 204-211-0 dibutyl phthalate (DBP) CAS No 84-74-2 Einecs No 201-557-4 benzyl butyl phthalate (BBP) CAS No 85-68-7 Einecs No 201-622-7</p>	<p>Shall not be used as substances or as constituents of preparations, at concentrations higher than 0,1 % by mass of the plasticised material, in toys and childcare articles ⁽⁵⁾.</p> <p>Toys and childcare articles containing these phthalates in a concentration higher than 0,1 % by mass of the plasticised material shall not be placed on the market.</p> <p>The Commission shall re-evaluate, by 16 January 2010, the measures provided for in relation to this point in the light of new scientific information on such substances and their substitutes, and if justified, these measures shall be modified accordingly.</p>
<p>52. The following phthalates (or other CAS- and EINECS numbers covering the substance): di-'isononyl' phthalate (DINP) CAS No 28553-12-0 and 68515-48-0 Einecs No 249-079-5 and 271-090-9 di-'isodecyl' phthalate (DIDP) CAS No 26761-40-0 and 68515-49-1 Einecs No 247-977-1 and 271-091-4 di-n-octyl phthalate (DNOP) CAS No 117-84-0 Einecs No 204-214-7</p>	<p>Shall not be used as substances or as constituents of preparations, at concentrations higher than 0,1 % by mass of the plasticised material, in toys and childcare articles ⁽⁵⁾ which can be placed in the mouth by children.</p> <p>Toys and childcare articles containing these phthalates in a concentration higher than 0,1 % by mass of the plasticised material shall not be placed on the market.</p> <p>The Commission shall re-evaluate, by 16 January 2010, the measures provided for in relation to this point in the light of new scientific information on such substances and their substitutes, and if justified, these measures shall be modified accordingly.</p>

⁽¹⁾ OJ L 377, 31.12.1991, p. 20. Directive as last amended by Regulation (EC) No 166/2006 of the European Parliament and of the Council (OJ L 33, 4.2.2006, p. 1).

⁽²⁾ Chrysotile has two CAS Nos, confirmed by ECB.

⁽³⁾ Council Regulation (EEC) No 2658/87 of 23 July 1987 on the tariff and statistical nomenclature and on the Common Customs Tariff (OJ L 256, 7.9.1987). Regulation as last amended by Regulation (EC) No 426/2006 (OJ L 79, 16.3.2006, p. 1).

⁽⁴⁾ OJ L 147, 9.6.1975, p. 40. Directive as last amended by Regulation (EC) No 807/2003 (OJ L 122, 16.5.2003, p. 36).

⁽⁵⁾ For the purposes of this point 'childcare article' shall mean any product intended to facilitate sleep, relaxation, hygiene, the feeding of children or sucking on the part of children.

Appendices 1 to 6

FOREWORD

Explanations of column headings*Substances:*

The name is the same as that used for the substance in Annex I to Directive 67/548/EEC. Whenever possible dangerous substances are designated by their EINECS (European Inventory of Existing Commercial Chemical Substances) or ELINCS (European List of Notified Chemical Substances) names. These are referred to as EC numbers in the table. Other entries not listed in EINECS or ELINCS are designated using an internationally recognised chemical name (e.g. ISO, IUPAC). An additional common name is included in some cases.

Index number:

The index number is the identification code given to the substance in Annex I of Directive 67/548/EEC. Substances are listed in the Appendix according to this index number.

EINECS number:

For each substance listed in the EINECS there is an identification code. The code starts at 200-001 8.

ELINCS number

For each new substance notified under the Directive 67/548/EEC an identification code has been defined and published in the ELINCS. The code starts at 400-010-9.

CAS number:

Chemical Abstracts Service (CAS) numbers have been defined for substances to help in their identification.

Notes:

The full text of the notes can be found in the Foreword of Annex I to Directive 67/548/EEC.

The notes to be taken into account for the purposes of this Regulation are the following:

Note A:

The name of the substance must appear on the label in the form of one of the designations given in Annex I to Directive 67/548/EEC (see Article 23(2)(a) of that Directive).

In Annex I to Directive 67/548/EEC, use is sometimes made of a general description such as '... compounds' or '... salts'. In this case, the manufacturer or any other person who places such a substance on the market is required to state on the label the correct name, due account being taken of the Chapter entitled 'Nomenclature' of the Foreword to that Annex.

Directive 67/548/EEC also requires that the symbols, indications of danger, R- and S-phrases to be used for each substance shall be those shown in Annex I to that Directive (Article 23(2)(c), (d) and (e) of that Directive).

For substances belonging to one particular group of substances included in Annex I to Directive 67/548/EEC, the symbols, indications of danger, R- and S-phrases to be used for each substance shall be those shown in the appropriate entry in that Annex.

For substances belonging to more than one group of substances included in Annex I to Directive 67/548/EEC, the symbols, indications of danger, R- and S-phrases to be used for each substance shall be those shown in both the appropriate entries given in that Annex. In cases where two different classifications are given in the two entries for the same hazard, the classification reflecting the more severe hazard classification shall be used.

Note C:

Some organic substances may be marketed either in a specific isomeric form or as a mixture of several isomers.

Note D:

Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed in Annex I to Directive 67/548/EEC.

However, such substances are sometimes placed on the market in a non-stabilised form. In this case, the manufacturer or any person who places such a substance on the market must state on the label the name of the substance followed by the words 'non-stabilised'.

Note E:

Substances with specific effects on human health (see chapter 4 of Annex VI of Directive 67/548/EEC) that are classified as carcinogenic, mutagenic and/or toxic for reproduction in categories 1 or 2 are ascribed Note E if they are also classified as very toxic (T+), toxic (T) or harmful (Xn). For these substances, the risk phrases R20, R21, R22, R23, R24, R25, R26, R27, R28, R39, R68 (harmful), R48 and R65 and all combinations of these risk phrases shall be preceded by the word 'Also'.

Note H:

The classification and label shown for this substance applies to the dangerous property(ies) indicated by the risk phrase(s) in combination with the category(ies) of danger shown. The requirements of Article 6 of Directive 67/548/EEC on manufacturers, distributors, and importers of this substance apply to all other aspects of classification and labelling. The final label shall follow the requirements of section 7 of Annex VI to Directive 67/548/EEC.

This note applies to certain coal- and oil-derived substances and to certain entries for groups of substances in Annex I to Directive 67/548/EEC.

Note J:

The classification as a carcinogen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (EINECS No 200-753-7).

Note K:

The classification as a carcinogen or mutagen need not apply if it can be shown that the substance contains less than 0,1 % w/w 1,3-butadiene (EINECS No 203-450-8). If the substance is not classified as a carcinogen or mutagen, at least the S-phrases (2-)9-16 should apply. This note applies to certain complex oil-derived substances in Annex I to Directive 67/548/EC

Note L:

The classification as a carcinogen need not apply if it can be shown that the substance contains less than 3 % DMSO extract as measured by IP 346.

Note M:

The classification as a carcinogen need not apply if it can be shown that the substance contains less than 0,005 % w/w benzo[a]-pyrene (EINECS No 200-028-5).

Note N:

The classification as a carcinogen need not apply if the full refining history is known and it can be shown that the substance from which it is produced is not a carcinogen.

Note P:

The classification as a carcinogen need not apply if it can be shown that the substance contains less than 0,1 % w/w benzene (EINECS No 200-753-7).

Note R:

The classification as a carcinogen need not apply to fibres with a length weighted geometric mean diameter, less two standard errors, greater than 6µm.

Note S:

This substance may not require a label according to Article 23 of Directive 67/548/EEC (see section 8 of Annex VI of that Directive).

Appendix 1

Point 28 — Carcinogens: category 1

Substances	Index No	EC No	CAS No	Notes
Chromium (VI) trioxide	024-001-00-0	215-607-8	1333-82-0	E
Zinc chromates including zinc potassium chromate	024-007-00-3			
Nickel monoxide	028-003-00-2	215-215-7	1313-99-1	
Nickel dioxide	028-004-00-8	234-823-3	12035-36-8	
Dinickel trioxide	028-005-00-3	215-217-8	1314-06-3	
Nickel sulphide	028-006-00-9	240-841-2	16812-54-7	
Nickel subsulphide	028-007-00-4	234-829-6	12035-72-2	
Diarsenic trioxide; arsenic trioxide	033-003-00-0	215-481-4	1327-53-3	
Arsenic pentoxide; arsenic oxide	033-004-00-6	215-116-9	1303-28-2	
Arsenic acid and its salts	033-005-00-1			
Lead hydrogen arsenate	082-011-00-0	232-064-2	7784-40-9	
Butane [containing ≥ 0,1 % Butadiene (203-450-8)] [1]	601-004-01-8	203-448-7 [1]	106-97-8 [1]	C, S
Isobutane [containing ≥ 0,1 % Butadiene (203-450-8)] [2]		200-857-2 [2]	75-28-5 [2]	
1,3-Butadiene; buta-1,3-diene	601-013-00-X	203-450-8	106-99-0	D
Benzene	601-020-00-8	200-753-7	71-43-2	E
Triethyl arsenate	601-067-00-4	427-700-2	15606-95-8	
Vinyl chloride; chloroethylene	602-023-00-7	200-831-0	75-01-4	
Bis (chloromethyl) ether	603-046-00-5	208-832-8	542-88-1	
Chloromethyl methyl ether; chlorodimethyl ether	603-075-00-3	203-480-1	107-30-2	
2-Naphthylamine; beta-naphthylamine	612-022-00-3	202-080-4	91-59-8	E
Benzidine; 4,4'-diaminobiphenyl; biphenyl-4,4'-ylenediamine	612-042-00-2	202-199-1	92-87-5	E
Salts of benzidine	612-070-00-5			
Salts of 2-naphthylamine	612-071-00-0	209-030-0[1] 210-313-6[2]	553-00-4[1] 612-52-2[2]	
Biphenyl-4-ylamine; xenylamine; 4-aminobiphenyl	612-072-00-6	202-177-1	92-67-1	
Salts of biphenyl-4-ylamine; salts of xenylamine; salts of 4-aminobiphenyl	612-073-00-1			
Tar, coal; Coal tar (The by-product from the destructive distillation of coal. Almost black semisolid. A complex combination of aromatic hydro-carbons, phenolic compounds, nitrogen bases and thiophene.)	648-081-00-7	232-361-7	8007-45-2	

Substances	Index No	EC No	CAS No	Notes
<p>Tar, coal, high-temperature; Coal tar</p> <p>(The condensation product obtained by cooling, to approximately ambient temperature, the gas evolved in the high temperature (greater than 700 °C) destructive distillation of coal. A black viscous liquid denser than water. Composed primarily of a complex mixture of condensed ring aromatic hydrocarbons. May contain minor amounts of phenolic compounds and aromatic nitrogen bases.)</p>	648-082-00-2	266-024-0	65996-89-6	
<p>Tar, coal, low-temperature; Coal oil</p> <p>(The condensation product obtained by cooling, to approximately ambient temperature, the gas evolved in low temperature (less than 700 °C) destructive distillation of coal. A black viscous liquid denser than water. Composed primarily of condensed ring aromatic hydrocarbons, phenolic compounds, aromatic nitrogen bases, and their alkyl derivatives.)</p>	648-083-00-8	266-025-6	65996-90-9	
<p>Tar brown-coal;</p> <p>(An oil distilled from brown-coal tar. Composed primarily of aliphatic, naphthenic and one- to three-ring aromatic hydrocarbons, their alkyl derivatives, heteroaromatics and one- and two-ring phenols boiling in the range of approximately 150 °C to 360 °C.)</p>	648-145-00-4	309-885-0	101 316-83-0	
<p>Tar, brown-coal, low temperature;</p> <p>(A tar obtained from low temperature carbonisation and low temperature gasification of brown coal. Composed primarily of aliphatic, naphthenic and cyclic aromatic hydrocarbons, heteroaromatic hydrocarbons and cyclic phenols.)</p>	648-146-00-X	309-886-6	101 316-84-1	
<p>Distillates (petroleum), light paraffinic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons produced by vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀ and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains a relatively large proportion of saturated aliphatic hydrocarbons normally present in this distillation range of crude oil.)</p>	649-050-00-0	265-051-5	64741-50-0	
<p>Distillates (petroleum), heavy paraffinic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons produced by vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀, and produces a finished oil with a viscosity of at least 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains a relatively large proportion of saturated aliphatic hydrocarbons.)</p>	649-051-00-6	265-052-0	64741-51-1	
<p>Distillates (petroleum), light naphthenic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons produced by vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀, and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-052-00-1	265-053-6	64741-52-2	

Substances	Index No	EC No	CAS No	Notes
<p>Distillates (petroleum), heavy naphthenic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons produced by vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀, and produces a finished oil with a viscosity of at least 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-053-00-7	265-054-1	64741-53-3	
<p>Distillates (petroleum), acid-treated heavy naphthenic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons obtained as a raffinate from a sulfuric acid treating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀, and produces a finished oil with a viscosity of at least 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-054-00-2	265-117-3	64742-18-3	
<p>Distillates (petroleum), acid-treated light naphthenic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons obtained as a raffinate from a sulfuric acid treating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀, and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-055-00-8	265-118-9	64742-19-4	
<p>Distillates (petroleum), acid-treated heavy paraffinic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons obtained as a raffinate from a sulfuric acid process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀, and produces a finished oil with a viscosity of at least 19 10⁻⁶ m².s⁻¹ at 40 °C.)</p>	649-056-00-3	265-119-4	64742-20-7	
<p>Distillates (petroleum), acid-treated light paraffinic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons obtained as a raffinate from a sulfuric acid treating process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀ and produces a finished oil having a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C.)</p>	649-057-00-9	265-121-5	64742-21-8	
<p>Distillates (petroleum), chemically neutralised heavy paraffinic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons obtained from a treating process to remove acidic materials. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀, and produces a finished oil with a viscosity of at least 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains a relatively large proportion of aliphatic hydrocarbons.)</p>	649-058-00-4	265-127-8	64742-27-4	
<p>Distillates (petroleum), chemically neutralised light paraffinic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀, and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C.)</p>	649-059-00-X	265-128-3	64742-28-5	

Substances	Index No	EC No	CAS No	Notes
<p>Distillates (petroleum), chemically neutralised heavy naphthenic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀, and produces a finished oil with a viscosity of at least 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-060-00-5	265-135-1	64742-34-3	
<p>Distillates (petroleum), chemically neutralised light naphthenic; Unrefined or mildly refined base oil</p> <p>(A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀, and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-061-00-0	265-136-7	64742-35-4	
<p>Gases (petroleum), catalytic cracked naphtha depropaniser overhead, C₃-rich acid-free; Petroleum gas</p> <p>(A complex combination of hydrocarbons obtained from fractionation of catalytic cracked hydrocarbons and treated to remove acidic impurities. It consists of hydrocarbons having carbon numbers in the range of C₂ through C₄, predominantly C₃.)</p>	649-062-00-6	270-755-0	68477-73-6	H, K
<p>Gases (petroleum), catalytic cracker; Petroleum gas</p> <p>(A complex combination of hydrocarbons produced by the distillation of the products from a catalytic cracking process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C₁ through C₆.)</p>	649-063-00-1	270-756-6	68477-74-7	H, K
<p>Gases (petroleum), catalytic cracker, C_{1,5}-rich; Petroleum gas</p> <p>(A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of aliphatic hydrocarbons having carbon numbers in the range of C₁ through C₆, predominantly C₁ through C₅.)</p>	649-064-00-7	270-757-1	68477-75-8	H, K
<p>Gases (petroleum), catalytic polymd. naphtha stabiliser overhead, C_{2,4}-rich; Petroleum gas</p> <p>(A complex combination of hydrocarbons obtained from the fractionation stabilisation of catalytic polymerised naphtha. It consists of aliphatic hydrocarbons having carbon numbers in the range of C₂ through C₆, predominantly C₂ through C₄.)</p>	649-065-00-2	270-758-7	68477-76-9	H, K
<p>Gases (petroleum), catalytic reformer, C_{1,4}-rich; Petroleum gas</p> <p>(A complex combination of hydrocarbons produced by distillation of products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers in the range of C₁ through C₆, predominantly C₁ through C₄.)</p>	649-066-00-8	270-760-8	68477-79-2	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), C _{3,5} olefinic-paraffinic alkylation feed; Petroleum gas (A complex combination of olefinic and paraffinic hydrocarbons having carbon numbers in the range of C ₃ through C ₅ which are used as alkylation feed. Ambient temperatures normally exceed the critical temperature of these combinations.)	649-067-00-3	270-765-5	68477-83-8	H, K
Gases (petroleum), C ₄ -rich; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from a catalytic fractionation process. It consists of aliphatic hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₄ .)	649-068-00-9	270-767-6	68477-85-0	H, K
Gases (petroleum), deethaniser overheads; Petroleum gas (A complex combination of hydrocarbons produced from distillation of the gas and gasoline fractions from the catalytic cracking process. It contains predominantly ethane and ethylene.)	649-069-00-4	270-768-1	68477-86-1	H, K
Gases (petroleum), deisobutaniser tower overheads; Petroleum gas (A complex combination of hydrocarbons produced by the atmospheric distillation of a butane-butylene stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-070-00-X	270-769-7	68477-87-2	H, K
Gases (petroleum), depropaniser dry, propene-rich; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from the gas and gasoline fractions of a catalytic cracking process. It consists predominantly of propylene with some ethane and propane.)	649-071-00-5	270-772-3	68477-90-7	H, K
Gases (petroleum), depropaniser overheads; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from the gas and gasoline fractions of a catalytic cracking process. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-072-00-0	270-773-9	68477-91-8	H, K
Gases (petroleum), gas recovery plant depropaniser overheads; Petroleum gas (A complex combination of hydrocarbons obtained by fractionation of miscellaneous hydrocarbon streams. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₄ , predominantly propane.)	649-073-00-6	270-777-0	68477-94-1	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), Girbatol unit feed; Petroleum gas (A complex combination of hydrocarbons that is used as the feed into the Girbatol unit to remove hydrogen sulfide. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-074-00-1	270-778-6	68477-95-2	H, K
Gases (petroleum), isomerised naphtha fractionator, C ₄ -rich, hydrogen sulfide-free; Petroleum gas	649-075-00-7	270-782-8	68477-99-6	H, K
Tail gas (petroleum), catalytic cracked clarified oil and thermal cracked vacuum residue fractionation reflux drum; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked clarified oil and thermal cracked vacuum residue. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-076-00-2	270-802-5	68478-21-7	H, K
Tail gas (petroleum), catalytic cracked naphtha stabilisation absorber; Petroleum gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-077-00-8	270-803-0	68478-22-8	H, K
Tail gas (petroleum), catalytic cracker, catalytic reformer and hydrodesulphuriser combined fractionator; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of products from catalytic cracking, catalytic reforming and hydrodesulphurising processes treated to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-078-00-3	270-804-6	68478-24-0	H, K
Tail gas (petroleum), catalytic reformed naphtha fractionation stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of catalytic reformed naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-079-00-9	270-806-7	68478-26-2	H, K
Tail gas (petroleum), saturate gas plant mixed stream, C ₄ -rich; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of straight-run naphtha, distillation tail gas and catalytic reformed naphtha stabiliser tail gas. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₆ , predominantly butane and isobutane.)	649-080-00-4	270-813-5	68478-32-0	H, K
Tail gas (petroleum), saturate gas recovery plant, C _{1,2} -rich; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of distillate tail gas, straight-run naphtha, catalytic reformed naphtha stabiliser tail gas. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₅ , predominantly methane and ethane.)	649-081-00-X	270-814-0	68478-33-1	H, K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), vacuum residues thermal cracker; Petroleum gas (A complex combination of hydrocarbons obtained from the thermal cracking of vacuum residues. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-082-00-5	270-815-6	68478-34-2	H, K
Hydrocarbons, C _{3,4} -rich, petroleum distillate; Petroleum gas (A complex combination of hydrocarbons produced by distillation and condensation of crude oil. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₃ through C ₄ .)	649-083-00-0	270-990-9	68512-91-4	H, K
Gases (petroleum), full-range straight-run naphtha dehexaniser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of the full-range straight-run naphtha. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-084-00-6	271-000-8	68513-15-5	H, K
Gases (petroleum), hydrocracking depropaniser off, hydrocarbon-rich; Petroleum gas (A complex combination of hydrocarbon produced by the distillation of products from a hydrocracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ . It may also contain small amounts of hydrogen and hydrogen sulfide.)	649-085-00-1	271-001-3	68513-16-6	H, K
Gases (petroleum), light straight-run naphtha stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained by the stabilisation of light straight-run naphtha. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-086-00-7	271-002-9	68513-17-7	H, K
Residues (petroleum), alkylation splitter, C ₄ -rich; Petroleum gas (A complex residuum from the distillation of streams from various refinery operations. It consists of hydrocarbons having carbon numbers in the range of C ₄ through C ₅ , predominantly butane, and boiling in the range of approximately -11,7 °C to 27,8 °C.)	649-087-00-2	271-010-2	68513-66-6	H, K
Hydrocarbons, C ₁₋₄ ; Petroleum gas (A complex combination of hydrocarbons provided by thermal cracking and absorber operations and by distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ and boiling in the range of approximately - 164 °C to - 0,5 °C.)	649-088-00-8	271-032-2	68514-31-8	H, K
Hydrocarbons, C ₁₋₄ , sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting hydrocarbon gases to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ and boiling in the range of approximately - 164 °C to - 0,5 °C.)	649-089-00-3	271-038-5	68514-36-3	H, K

Substances	Index No	EC No	CAS No	Notes
Hydrocarbons, C ₁₋₃ ; Petroleum gas (A complex combination of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ and boiling in the range of approximately - 164 °C to - 42 °C.)	649-090-00-9	271-259-7	68527-16-2	H, K
Hydrocarbons, C ₁₋₄ ; debutaniser fraction; Petroleum gas	649-091-00-4	271-261-8	68527-19-5	H, K
Gases (petroleum), C ₁₋₅ , wet; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of crude oil and/or the cracking of tower gas oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-092-00-X	271-624-0	68602-83-5	H, K
Hydrocarbons, C ₂₋₄ ; Petroleum gas	649-093-00-5	271-734-9	68606-25-7	H, K
Hydrocarbons, C ₃ ; Petroleum gas	649-094-00-0	271-735-4	68606-26-8	H, K
Gases (petroleum), alkylation feed; Petroleum gas (A complex combination of hydrocarbons produced by the catalytic cracking of gas oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-095-00-6	271-737-5	68606-27-9	H, K
Gases (petroleum), depropaniser bottoms fractionation off; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of depropaniser bottoms. It consists predominantly of butane, isobutane and butadiene.)	649-096-00-1	271-742-2	68606-34-8	H, K
Gases (petroleum), refinery blend; Petroleum gas (A complex combination obtained from various processes. It consists of hydrogen, hydrogen sulfide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-097-00-7	272-183-7	68783-07-3	H, K
Gases (petroleum), catalytic cracking; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of the products from a catalytic cracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ .)	649-098-00-2	272-203-4	68783-64-2	H, K
Gases (petroleum), C ₂₋₄ , sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting a petroleum distillate to a sweetening process to convert mercaptans or to remove acidic impurities. It consists predominantly of saturated and unsaturated hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ and boiling in the range of approximately - 51 °C to - 34 °C.)	649-099-00-8	272-205-5	68783-65-3	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), crude oil fractionation off; Petroleum gas (A complex combination of hydrocarbons produced by the fractionation of crude oil. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-100-00-1	272-871-7	68918-99-0	H, K
Gases (petroleum), dehexaniser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of combined naphtha streams. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-101-00-7	272-872-2	68919-00-6	H, K
Gases (petroleum), light straight run gasoline fractionation stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of light straight-run gasoline. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-102-00-2	272-878-5	68919-05-1	H, K
Gases (petroleum), naphtha unifier desulphurisation stripper off; Petroleum gas (A complex combination of hydrocarbons produced by a naphtha unifier desulphurisation process and stripped from the naphtha product. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-103-00-8	272-879-0	68919-06-2	H, K
Gases (petroleum), straight-run naphtha catalytic reforming off; Petroleum gas (A complex combination of hydrocarbons obtained by the catalytic reforming of straight-run naphtha and fractionation of the total effluent. It consists of methane, ethane, and propane.)	649-104-00-3	272-882-7	68919-09-5	H, K
Gases (petroleum), fluidised catalytic cracker splitter overheads; Petroleum gas (A complex combination of hydrocarbons produced by the fractionation of the charge to the C ₃ -C ₄ splitter. It consists predominantly of C ₃ hydrocarbons.)	649-105-00-9	272-893-7	68919-20-0	H, K
Gases (petroleum), straight-run stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of the liquid from the first tower used in the distillation of crude oil. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-106-00-4	272-883-2	68919-10-8	H, K
Gases (petroleum), catalytic cracked naphtha debutaniser; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked naphtha. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-107-00-X	273-169-3	68952-76-1	H, K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), catalytic cracked distillate and naphtha stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of catalytic cracked naphtha and distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-108-00-5	273-170-9	68952-77-2	H, K
Tail gas (petroleum), thermal-cracked distillate, gas oil and naphtha absorber; Petroleum gas (A complex combination of hydrocarbons obtained from the separation of thermal-cracked distillates, naphtha and gas oil. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-109-00-0	273-175-6	68952-81-8	H, K
Tail gas (petroleum), thermal cracked hydrocarbon fractionation stabiliser, petroleum coking; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of thermal cracked hydrocarbons from a petroleum coking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-110-00-6	273-176-1	68952-82-9	H, K
Gases (petroleum, light steam-cracked, butadiene conc.; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a thermal cracking process. It consists of hydrocarbons having a carbon number predominantly of C ₄ .)	649-111-00-1	273-265-5	68955-28-2	H, K
Gases (petroleum), straight-run naphtha catalytic reformer stabiliser overhead; Petroleum gas (A complex combination of hydrocarbons obtained by the catalytic reforming of straight-run naphtha and the fractionation of the total effluent. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-112-00-7	273-270-2	68955-34-0	H, K
Hydrocarbons, C ₄ ; Petroleum gas	649-113-00-2	289-339-5	27741-01-3	H, K
Alkanes, C ₁₋₄ , C ₃ -rich; Petroleum gas	649-114-00-8	292-456-4	90622-55-2	H, K
Gases (petroleum), steam-cracker C ₃ -rich; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a steam cracking process. It consists predominantly of propylene with some propane and boils in the range of approximately - 70 °C to 0 °C.)	649-115-00-3	295-404-9	92045-22-2	H, K
Hydrocarbons, C ₄ , steam-cracker distillate; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of the products of a steam cracking process. It consists predominantly of hydrocarbons having a carbon number of C ₄ , predominantly 1-butene and 2-butene, containing also butane and isobutene and boiling in the range of approximately - 12 °C to 5 °C.)	649-116-00-9	295-405-4	92045-23-3	H, K

Substances	Index No	EC No	CAS No	Notes
Petroleum gases, liquefied, sweetened, C ₄ fraction; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting a liquified petroleum gas mix to a sweetening process to oxidise mercaptans or to remove acidic impurities. It consists predominantly of C ₄ saturated and unsaturated hydrocarbons.)	649-117-00-4	295-463-0	92045-80-2	H, K
Raffinates (petroleum), steam-cracked C ₄ fraction cuprous ammonium acetate extraction, C _{3,5} and C _{3,5} unsaturated, butadiene-free; Petroleum gas	649-119-00-5	307-769-4	97722-19-5	H, K
Gases (petroleum), amine system feed; Refinery gas (The feed gas to the amine system for removal of hydrogen sulphide. It consists primarily of hydrogen. Carbon monoxide, carbon dioxide, hydrogen sulfide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ may also be present.)	649-120-00-0	270-746-1	68477-65-6	H, K
Gases (petroleum), benzene unit hydrodesulphuriser off; Refinery gas (Off gases produced by the benzene unit. It consists primarily of hydrogen. Carbon monoxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ , including benzene, may also be present.)	649-121-00-6	270-747-7	68477-66-7	H, K
Gases (petroleum), benzene unit recycle, hydrogen-rich; Refinery gas (A complex combination of hydrocarbons obtained by recycling the gases of the benzene unit. It consists primarily of hydrogen with various small amounts of carbon monoxide and hydrocarbons having carbon numbers in the range of C ₁ through C ₆ .)	649-122-00-1	270-748-2	68477-67-8	H, K
Gases (petroleum), blend oil, hydrogen-nitrogen-rich; Refinery gas (A complex combination of hydrocarbons obtained by distillation of a blend oil. It consists primarily of hydrogen and nitrogen with various small amounts of carbon monoxide, carbon dioxide, and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-123-00-7	270-749-8	68477-68-9	H, K
Gases (petroleum), catalytic reformed naphtha stripper overheads; Refinery gas (A complex combination of hydrocarbons obtained from stabilisation of catalytic reformed naphtha. It consists of hydrogen and saturated hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-124-00-2	270-759-2	68477-77-0	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), C ₆₋₈ catalytic reformer recycle; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from catalytic reforming of C ₆ -C ₈ feed and recycled to conserve hydrogen. It consists primarily of hydrogen. It may also contain various small amounts of carbon monoxide, carbon dioxide, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-125-00-8	270-760-3	68477-80-5	H, K
Gases (petroleum), C ₆₋₈ catalytic reformer; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from catalytic reforming of C ₆ -C ₈ feed. It consists of hydrocarbons having carbon numbers in the range of C ₁ through C ₃ and hydrogen.)	649-126-00-3	270-762-9	68477-81-6	H, K
Gases (petroleum), C ₆₋₈ catalytic reformer recycle, hydrogen-rich; Refinery gas	649-127-00-9	270-763-4	68477-82-7	H, K
Gases (petroleum), C ₂ -return stream; Refinery gas (A complex combination of hydrocarbons obtained by the extraction of hydrogen from a gas stream which consists primarily of hydrogen with small amounts of nitrogen, carbon monoxide, methane, ethane, and ethylene. It contains predominantly hydrocarbons such as methane, ethane, and ethylene with small amounts of hydrogen, nitrogen and carbon monoxide.)	649-128-00-4	270-766-0	68477-84-9	H, K
Gases (petroleum), dry sour, gas-concentration-unit-off; Refinery gas (The complex combination of dry gases from a gas concentration unit. It consists of hydrogen, hydrogen sulphide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-129-00-X	270-774-4	68477-92-9	H, K
Gases (petroleum), gas concentration reabsorber distillation; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from combined gas streams in a gas concentration reabsorber. It consists predominantly of hydrogen, carbon monoxide, carbon dioxide, nitrogen, hydrogen sulphide and hydrocarbons having carbon numbers in the range of C ₁ through C ₃ .)	649-130-00-5	270-776-5	68477-93-0	H, K
Gases (petroleum), hydrogen absorber off; Refinery gas (A complex combination obtained by absorbing hydrogen from a hydrogen rich stream. It consists of hydrogen, carbon monoxide, nitrogen, and methane with small amounts of C ₂ hydrocarbons.)	649-131-00-0	270-779-1	68477-96-3	H, K
Gases (petroleum), hydrogen-rich; Refinery gas (A complex combination separated as a gas from hydrocarbon gases by chilling. It consists primarily of hydrogen with various small amounts of carbon monoxide, nitrogen, methane, and C ₂ hydrocarbons.)	649-132-00-6	270-780-7	68477-97-4	H, K

Substances	Index No	EC No	CAS No	Notes
<p>Gases (petroleum), hydrotreater blend oil recycle, hydrogen-nitrogen-rich; Refinery gas</p> <p>(A complex combination obtained from recycled hydrotreated blend oil. It consists primarily of hydrogen and nitrogen with various small amounts of carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C₁ through C₅.)</p>	649-133-00-1	270-781-2	68477-98-5	H, K
<p>Gases (petroleum), recycle, hydrogen-rich; Refinery gas</p> <p>(A complex combination obtained from recycled reactor gases. It consists primarily of hydrogen with various small amounts of carbon monoxide, carbon dioxide, nitrogen, hydrogen sulphide, and saturated aliphatic hydrocarbons having carbon numbers in the range of C₁ through C₅.)</p>	649-134-00-7	270-783-3	68478-00-2	H, K
<p>Gases (petroleum), reformer make-up, hydrogen-rich; Refinery gas</p> <p>(A complex combination obtained from the reformers. It consists primarily of hydrogen with various small amounts of carbon monoxide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C₁ through C₅.)</p>	649-135-00-2	270-784-9	68478-01-3	H, K
<p>Gases (petroleum), reforming hydrotreater; Refinery gas</p> <p>(A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen, methane, and ethane with various small amounts of hydrogen sulphide and aliphatic hydrocarbons having carbon numbers predominantly in the range C₃ through C₅.)</p>	649-136-00-8	270-785-4	68478-02-4	H, K
<p>Gases (petroleum), reforming hydrotreater, hydrogen-methane-rich; Refinery gas</p> <p>(A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen and methane with various small amounts of carbon monoxide, carbon dioxide, nitrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C₂ through C₅.)</p>	649-137-00-3	270-787-5	68478-03-5	H, K
<p>Gases (petroleum), reforming hydrotreater make-up, hydrogen-rich; Refinery gas</p> <p>(A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen with various small amounts of carbon monoxide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C₁ through C₅.)</p>	649-138-00-9	270-788-0	68478-04-6	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), thermal cracking distillation; Refinery gas (A complex combination produced by distillation of products from a thermal cracking process. It consists of hydrogen, hydrogen sulphide, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-139-00-4	270-789-6	68478-05-7	H, K
Tail gas (petroleum), catalytic cracker refractionation absorber; Refinery gas (A complex combination of hydrocarbons obtained from refractionation of products from a catalytic cracking process. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-140-00-X	270-805-1	68478-25-1	H, K
Tail gas (petroleum), catalytic reformed naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from the catalytic reforming of straight-run naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-141-00-5	270-807-2	68478-27-3	H, K
Tail gas (petroleum), catalytic reformed naphtha stabiliser; Refinery gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic reformed naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-142-00-0	270-808-8	68478-28-4	H, K
Tail gas (petroleum), cracked distillate hydrotreater separator; Refinery gas (A complex combination of hydrocarbons obtained by treating cracked distillates with hydrogen in the presence of a catalyst. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-143-00-6	270-809-3	68478-29-5	H, K
Tail gas (petroleum), hydrodesulphurised straight-run naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from hydrodesulphurisation of straight-run naphtha. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-144-00-1	270-810-9	68478-30-8	H, K
Gases (petroleum), catalytic reformed straight-run naphtha stabiliser overheads; Refinery gas (A complex combination of hydrocarbons obtained from the catalytic reforming of straight-run naphtha followed by fractionation of the total effluent. It consists of hydrogen, methane, ethane and propane.)	649-145-00-7	270-999-8	68513-14-4	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), reformer effluent high-pressure flash drum off; Refinery gas (A complex combination produced by the high-pressure flashing of the effluent from the reforming reactor. It consists primarily of hydrogen with various small amounts of methane, ethane, and propane.)	649-146-00-2	271-003-4	68513-18-8	H, K
Gases (petroleum), reformer effluent low-pressure flash drum off; Refinery gas (A complex combination produced by low-pressure flashing of the effluent from the reforming reactor. It consists primarily of hydrogen with various small amounts of methane, ethane, and propane.)	649-147-00-8	271-005-5	68513-19-9	H, K
Gases (petroleum), oil refinery gas distillation off; Refinery gas (A complex combination separated by distillation of a gas stream containing hydrogen, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers in the range of C ₁ through C ₆ or obtained by cracking ethane and propane. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₂ , hydrogen, nitrogen, and carbon monoxide.)	649-148-00-3	271-258-1	68527-15-1	H, K
Gases (petroleum), benzene unit hydrotreater depentaniser overheads; Refinery gas (A complex combination produced by treating the feed from the benzene unit with hydrogen in the presence of a catalyst followed by depentanising. It consists primarily of hydrogen, ethane and propane with various small amounts of nitrogen, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ . It may contain trace amounts of benzene.)	649-149-00-9	271-623-5	68602-82-4	H, K
Gases (petroleum), secondary absorber off, fluidised catalytic cracker overheads fractionator; Refinery gas (A complex combination produced by the fractionation of the overhead products from the catalytic cracking process in the fluidised catalytic cracker. It consists of hydrogen, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-150-00-4	271-625-6	68602-84-6	H, K
Petroleum products, refinery gases; Refinery gas (A complex combination which consists primarily of hydrogen with various small amounts of methane, ethane and propane.)	649-151-00-X	271-750-6	68607-11-4	H, K
Gases (petroleum), hydrocracking low-pressure separator; Refinery gas (A complex combination obtained by the liquid-vapour separation of the hydrocracking process reactor effluent. It consists predominantly of hydrogen and saturated hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-152-00-5	272-182-1	68783-06-2	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), refinery; Refinery gas (A complex combination obtained from various petroleum refining operations. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-153-00-0	272-338-9	68814-67-5	H, K
Gases (petroleum), platformer products separator off; Refinery gas (A complex combination obtained from the chemical reforming of naphthenes to aromatics. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-154-00-6	272-343-6	68814-90-4	H, K
Gases (petroleum), hydrotreated sour kerosine depentaniser stabiliser off; Refinery gas (The complex combination obtained from the depentaniser stabilisation of hydrotreated kerosine. It consists primarily of hydrogen, methane, ethane, and propane with various small amounts of nitrogen, hydrogen sulphide, carbon monoxide and hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₅ .)	649-155-00-1	272-775-5	68911-58-0	H, K
Gases (petroleum), hydrotreated sour kerosine flash drum; Refinery gas (A complex combination obtained from the flash drum of the unit treating sour kerosine with hydrogen in the presence of a catalyst. It consists primarily of hydrogen and methane with various small amounts of nitrogen, carbon monoxide, and hydro-carbons having carbon numbers predominantly in the range of C ₂ through C ₅ .)	649-156-00-7	272-776-0	68911-59-1	H, K
Gases (petroleum), distillate unifier desulphurisation stripper off; Refinery gas (A complex combination stripped from the liquid product of the unifier desulphurisation process. It consists of hydrogen sulphide, methane, ethane, and propane.)	649-157-00-2	272-873-8	68919-01-7	H, K
Gases (petroleum), fluidised catalytic cracker fractionation off; Refinery gas (A complex combination produced by the fractionation of the overhead product of the fluidised catalytic cracking process. It consists of hydrogen, hydrogen sulphide, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-158-00-8	272-874-3	68919-02-8	H, K
Gases (petroleum), fluidised catalytic cracker scrubbing secondary absorber off; Refinery gas (A complex combination produced by scrubbing the overhead gas from the fluidised catalytic cracker. It consists of hydrogen, nitrogen, methane, ethane and propane.)	649-159-00-3	272-875-9	68919-03-9	H, K
Gases (petroleum), heavy distillate hydrotreater desulphurisation stripper off; Refinery gas (A complex combination stripped from the liquid product of the heavy distillate hydrotreater desulphurisation process. It consists of hydrogen, hydrogen sulphide, and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-160-00-9	272-876-4	68919-04-0	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), platformer stabiliser off, light ends fractionation; Refinery gas (A complex combination obtained by the fractionation of the light ends of the platinum reactors of the platformer unit. It consists of hydrogen, methane, ethane and propane.)	649-161-00-4	272-880-6	68919-07-3	H, K
Gases (petroleum), preflash tower off, crude distillation; Refinery gas (A complex combination produced from the first tower used in the distillation of crude oil. It consists of nitrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-162-00-X	272-881-1	68919-08-4	H, K
Gases (petroleum), tar stripper off; Refinery gas (A complex combination obtained by the fractionation of reduced crude oil. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-163-00-5	272-884-8	68919-11-9	H, K
Gases (petroleum), unifiner stripper off; Refinery gas (A combination of hydrogen and methane obtained by fractionation of the products from the unifiner unit.)	649-164-00-0	272-885-3	68919-12-0	H, K
Tail gas (petroleum), catalytic hydrodesulphurised naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from the hydrodesulphurisation of naphtha. It consists of hydrogen, methane, ethane, and propane.)	649-165-00-6	273-173-5	68952-79-4	H, K
Tail gas (petroleum), straight-run naphtha hydrodesulphuriser; Refinery gas (A complex combination obtained from the hydrodesulphurisation of straight-run naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-166-00-1	273-174-0	68952-80-7	H, K
Gases (petroleum), sponge absorber off, fluidised catalytic cracker and gas oil desulphuriser overhead fractionation; Refinery gas (A complex combination obtained by the fractionation of products from the fluidised catalytic cracker and gas oil desulphuriser. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-167-00-7	273-269-7	68955-33-9	H, K
Gases (petroleum), crude distillation and catalytic cracking; Refinery gas (A complex combination produced by crude distillation and catalytic cracking processes. It consists of hydrogen, hydrogen sulphide, nitrogen, carbon monoxide and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-168-00-2	273-563-5	68989-88-8	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), gas oil diethanolamine scrubber off; Refinery gas (A complex combination produced by desulphurisation of gas oils with diethanolamine. It consists predominantly of hydrogen sulphide, hydrogen and aliphatic hydrocarbons having carbon numbers in the range of C ₁ through C ₅ .)	649-169-00-8	295-397-2	92045-15-3	H, K
Gases (petroleum), gas oil hydrodesulphurisation effluent; Refinery gas (A complex combination obtained by separation of the liquid phase from the effluent from the hydrogenation reaction. It consists predominantly of hydrogen, hydrogen sulphide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-170-00-3	295-398-8	92045-16-4	H, K
Gases (petroleum), gas oil hydrodesulphurisation purge; Refinery gas (A complex combination of gases obtained from the reformer and from the purges from the hydrogenation reactor. It consists predominantly of hydrogen and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-171-00-9	295-399-3	92045-17-5	H, K
Gases (petroleum), hydrogenator effluent flash drum off; Refinery gas (A complex combination of gases obtained from flash of the effluents after the hydrogenation reaction. It consists predominantly of hydrogen and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-172-00-4	295-400-7	92045-18-6	H, K
Gases (petroleum), naphtha steam cracking high-pressure residual; Refinery gas (A complex combination obtained as a mixture of the non-condensable portions from the product of a naphtha steam cracking process as well as residual gases obtained during the preparation of subsequent products. It consists predominantly of hydrogen and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ with which natural gas may also be mixed.)	649-173-00-X	295-401-2	92045-19-7	H, K
Gases (petroleum), residue visbaking off; Refinery gas (A complex combination obtained from viscosity reduction of residues in a furnace. It consists predominantly of hydrogen sulphide and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-174-00-5	295-402-8	92045-20-0	H, K
Gases (petroleum), C _{3,4} ; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from the cracking of crude oil. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₄ , predominantly of propane and propylene, and boiling in the range of approximately - 51 °C to - 1 °C.)	649-177-00-1	268-629-5	68131-75-9	H, K

Substances	Index No	EC No	CAS No	Notes
<p>Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber; Petroleum gas</p> <p>(The complex combination of hydrocarbons from the distillation of the products from catalytic cracked distillates and catalytic cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C₁ through C₄.)</p>	649-178-00-7	269-617-2	68307-98-2	H, K
<p>Tail gas (petroleum), catalytic polymerisation naphtha fractionation stabiliser; Petroleum gas</p> <p>(A complex combination of hydrocarbons from the fractionation stabilisation products from polymerisation of naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C₁ through C₄.)</p>	649-179-00-2	269-618-8	68307-99-3	H, K
<p>Tail gas (petroleum), catalytic reformed naphtha fractionation stabiliser, hydrogen sulphide-free; Petroleum gas</p> <p>(A complex combination of hydrocarbons obtained from fractionation stabilisation of catalytic reformed naphtha and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₁ through C₄.)</p>	649-180-00-8	269-619-3	68308-00-9	H, K
<p>Tail gas (petroleum), cracked distillate hydrotreater stripper; Petroleum gas</p> <p>(A complex combination of hydrocarbons obtained by treating thermal cracked distillates with hydrogen in the presence of a catalyst. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C₁ through C₆.)</p>	649-181-00-3	269-620-9	68308-01-0	H, K
<p>Tail gas (petroleum), straight-run distillate hydrodesulphuriser, hydrogen sulphide-free; Petroleum gas</p> <p>(A complex combination of hydrocarbons obtained from catalytic hydrodesulphurisation of straight run distillates and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₁ through C₄.)</p>	649-182-00-9	269-630-3	68308-10-1	H, K
<p>Tail gas (petroleum), gas oil catalytic cracking absorber; Petroleum gas</p> <p>(A complex combination of hydrocarbons obtained from the distillation of products from the catalytic cracking of gas oil. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₁ through C₅.)</p>	649-183-00-4	269-623-5	68308-03-2	H, K
<p>Tail gas (petroleum), gas recovery plant; Petroleum gas</p> <p>(A complex combination of hydrocarbons from the distillation of products from miscellaneous hydrocarbon streams. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₁ through C₅.)</p>	649-184-00-X	269-624-0	68308-04-3	H, K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), gas recovery plant deethaniser; Petroleum gas (A complex combination of hydrocarbons from the distillation of products from miscellaneous hydrocarbon streams. It consists of hydrocarbon having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-185-00-5	269-625-6	68308-05-4	H, K
Tail gas (petroleum), hydrodesulphurised distillate and hydrodesulphurised naphtha fractionator, acid-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of hydrodesulphurised naphtha and distillate hydrocarbon streams and treated to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-186-00-0	269-626-1	68308-06-5	H, K
Tail gas (petroleum), hydrodesulphurised vacuum gas oil stripper, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from stripping stabilisation of catalytic hydrodesulphurised vacuum gas oil and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-187-00-6	269-627-7	68308-07-6	H, K
Tail gas (petroleum), light straight-run naphtha stabiliser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation stabilisation of light straight-run naphtha and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-188-00-1	269-629-8	68308-09-8	H, K
Tail gas (petroleum), propane-propylene alkylation feed prep deethaniser; Petroleum gas (A complex combination of hydrocarbons obtained from the distillation of the reaction products of propane with propylene. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-189-00-7	269-631-9	68308-11-2	H, K
Tail gas (petroleum), vacuum gas oil hydrodesulphuriser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from catalytic hydrodesulphurisation of vacuum gas oil and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-190-00-2	269-632-4	68308-12-3	H, K
Gases (petroleum), catalytic cracked overheads; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from the catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ and boiling in the range of approximately - 48 °C to 32 °C.)	649-191-00-8	270-071-2	68409-99-4	H, K

Substances	Index No	EC No	CAS No	Notes
Alkanes, C ₁₋₂ ; Petroleum gas	649-193-00-9	270-651-5	68475-57-0	H, K
Alkanes, C ₂₋₃ ; Petroleum gas	649-194-00-4	270-652-0	68475-58-1	H, K
Alkanes, C ₃₋₄ ; Petroleum gas	649-195-00-X	270-653-6	68475-59-2	H, K
Alkanes, C ₄₋₅ ; Petroleum gas	649-196-00-5	270-654-1	68475-60-5	H, K
Fuel gases; Petroleum gas (A combination of light gases. It consists predominantly of hydrogen and/or low molecular weight hydrocarbons.)	649-197-00-0	270-667-2	68476-26-6	H, K
Fuel gases, crude oil of distillates; Petroleum gas (A complex combination of light gases produced by distillation of crude oil and by catalytic reforming of naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ and boiling in the range of approximately - 217 °C to - 12 °C.)	649-198-00-6	270-670-9	68476-29-9	H, K
Hydrocarbons, C ₃₋₄ ; Petroleum gas	649-199-00-1	270-681-9	68476-40-4	H, K
Hydrocarbons, C ₄₋₅ ; Petroleum gas	649-200-00-5	270-682-4	68476-42-6	H, K
Hydrocarbons, C ₂₋₄ , C ₃ -rich; Petroleum gas	649-201-00-0	270-689-2	68476-49-3	H, K
Petroleum gases, liquefied; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₇ and boiling in the range of approximately - 40 °C to 80 °C.)	649-202-00-6	270-704-2	68476-85-7	H, K, S
Petroleum gases, liquefied, sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting liquefied petroleum gas mix to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₇ and boiling in the range of approximately - 40 °C to 80 °C.)	649-203-00-1	270-705-8	68476-86-8	H, K, S
Gases (petroleum), C ₃₋₄ , isobutane-rich; Petroleum gas (A complex combination of hydrocarbons from the distillation of saturated and unsaturated hydrocarbons usually ranging in carbon numbers from C ₃ through C ₆ , predominantly butane and isobutane. It consists of saturated and unsaturated hydrocarbons having carbon numbers in the range of C ₃ through C ₄ , predominantly isobutane.)	649-204-00-7	270-724-1	68477-33-8	H, K
Distillates (petroleum), C ₃₋₆ , piperylene-rich; Petroleum gas (A complex combination of hydrocarbons from the distillation of saturated and unsaturated aliphatic hydrocarbons usually ranging in the carbon numbers C ₃ through C ₆ . It consists of saturated and unsaturated hydrocarbons having carbon numbers in the range of C ₃ through C ₆ , predominantly piperlenes.)	649-205-00-2	270-726-2	68477-35-0	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), butane splitter overheads; Petroleum gas (A complex combination of hydrocarbons obtained from the distillation of the butane stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-206-00-8	270-750-3	68477-69-0	H, K
Gases (petroleum), C _{2,3} ; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a catalytic fractionation process. It contains predominantly ethane, ethylene, propane, and propylene.)	649-207-00-3	270-751-9	68477-70-3	H, K
Gases (petroleum), catalytic-cracked gas oil depropaniser bottoms, C ₄ -rich acid-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked gas oil hydrocarbon stream and treated to remove hydrogen sulphide and other acidic components. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₄ .)	649-208-00-9	270-752-4	68477-71-4	H, K
Gases (petroleum), catalytic-cracked naphtha debutaniser bottoms, C _{3,5} -rich; Petroleum gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic cracked naphtha. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ .)	649-209-00-4	270-754-5	68477-72-5	H, K
Tail gas (petroleum), isomerised naphtha fractionation stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation products from isomerised naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-210-00-X	269-628-2	68308-08-7	H, K
Erionite	650-012-00-0		12510-42-8	
Asbestos	650-013-00-6		12001-29-5 12001-28-4 132207-32-0 12172-73-5 77536-66-4 77536-68-6 77536-67-5	

Appendix 2

Point 28 — Carcinogens: category 2

Substances	Index No	EC No	CAS No	Notes
Beryllium	004-001-00-7	231-150-7	7440-41-7	
Beryllium compounds with the exception of aluminium beryllium silicates	004-002-00-2			
Beryllium oxide	004-003-00-8	215-133-1	1304-56-9	E
Sulfallate (ISO); 2-chlorallyl diethyldithiocarbamate	006-038-00-4	202-388-9	95-06-7	
Dimethylcarbamoyl chloride	006-041-00-0	201-208-6	79-44-7	
Diazomethane	006-068-00-8	206-382-7	334-88-3	
Hydrazine	007-008-00-3	206-114-9	302-01-2	E
N,N-Dimethylhydrazine	007-012-00-5	200-316-0	57-14-7	
1,2-Dimethylhydrazine	007-013-00-0		540-73-8	E
Salts of hydrazine	007-014-00-6			
Isobutyl nitrite	007-017-00-2	208-819-7	542-56-3	E
Hydrazobenzene; 1,2-diphenylhydrazine	007-021-00-4	204-563-5	122-66-7	
Hydrazine bis(3-carboxy-4-hydroxybenzenesulfonate)	007-022-00-X	405-030-1		
Hexamethylphosphoric triamide; hexamethylphosphoramide	015-106-00-2	211-653-8	680-31-9	
Dimethyl sulphate	016-023-00-4	201-058-1	77-78-1	E
Diethyl sulphate	016-027-00-6	200-589-6	64-67-5	
1,3-Propanesultone	016-032-00-3	214-317-9	1120-71-4	
Dimethylsulfamoylchloride	016-033-00-9	236-412-4	13360-57-1	
Potassium dichromate	024-002-00-6	231-906-6	7778-50-9	E
Ammonium dichromate	024-003-00-1	232-143-1	7789-09-5	E
Sodium dichromate anhydrate	024-004-00-7	234-190-3	10588-01-9	E
Sodium dichromate, dihydrate	024-004-01-4	234-190-3	7789-12-0	E
Chromyl dichloride; chromic oxychloride	024-005-00-2	239-056-8	14977-61-8	
Potassium chromate	024-006-00-8	232-140-5	7789-00-6	
Calcium chromate	024-008-00-9	237-366-8	13765-19-0	
Strontium chromate	024-009-00-4	232-142-6	7789-06-2	
Chromium III chromate; chromic chromate	024-010-00-X	246-356-2	24613-89-6	
Chromium (VI) compounds, with the exception of barium chromate and of compounds specified elsewhere in Annex I to Directive 67/548/EEC	024-017-00-8	—	—	
Sodium chromate	024-018-00-3	231-889-5	7775-11-3	E
Cobalt dichloride	027-004-00-5	231-589-4	7646-79-9	E
Cobalt sulphate	027-005-00-0	233-334-2	10124-43-3	E
Potassium bromate	035-003-00-6	231-829-8	7758-01-2	

Substances	Index No	EC No	CAS No	Notes
Cadmium oxide	048-002-00-0	215-146-2	1306-19-0	E
Cadmium fluoride	048-006-00-2	232-222-0	7790-79-6	E
Cadmium chloride	048-008-00-3	233-296-7	10108-64-2	E
Cadmium sulphate	048-009-00-9	233-331-6	10124-36-4	E
Cadmium sulphide	048-010-00-4	215-147-8	1306-23-6	E
Cadmium (pyrophoric)	048-011-00-X	231-152-8	7440-43-9	E
Isoprene (stabilised) 2-Methyl-1,3-butadiene	601-014-00-5	201-143-3	78-79-5	D
Benzo[a]pyrene; benzo[d,e,f]chrysene	601-032-00-3	200-028-5	50-32-8	
Benzo[a]anthracene	601-033-00-9	200-280-6	56-55-3	
Benzo[b]fluoranthene; benzo[e]acephenanthrylene	601-034-00-4	205-911-9	205-99-2	
Benzo[j]fluoranthene	601-035-00-X	205-910-3	205-82-3	
Benzo[k]fluoranthene	601-036-00-5	205-916-6	207-08-9	
Dibenz[a, h]anthracene	601-041-00-2	200-181-8	53-70-3	
Chrysene	601-048-00-0	205-923-4	218-01-9	
Benzo[e]pyrene	601-049-00-6	205-892-7	192-97-2	
1,2-Dibromoethane; ethylene dibromide	602-010-00-6	203-444-5	106-93-4	E
1,2-Dichloroethane; ethylene dichloride	602-012-00-7	203-458-1	107-06-2	
1,2-Dibromo-3-chloropropane	602-021-00-6	202-479-3	96-12-8	
Bromoethylene	602-024-00-2	209-800-6	593-60-2	
Trichloroethylene; trichloroethene	602-027-00-9	201-167-4	79-01-6	
Chloroprene (stabilised) 2-Chlorobuta-1,3-diene	602-036-00-8	204-818-0	126-99-8	D, E
α -Chlorotoluene; benzyl chloride	602-037-00-3	202-853-6	100-44-7	E
α,α,α -Trichlorotoluene; benzotrichloride	602-038-00-9	202-634-5	98-07-7	
1,2,3-Trichloropropane	602-062-00-X	202-486-1	96-18-4	D
1,3-Dichloro-2-propanol	602-064-00-0	202-491-9	96-23-1	
Hexachlorobenzene	602-065-00-6	204-273-9	118-74-1	
1,4-Dichlorobut-2-ene	602-073-00-X	212-121-8	764-41-0	E
2,3-dibromopropan-1-ol; 2,3-dibromo-1-propanol	602-088-00-1	202-480-9	96-13-9	E
$\alpha,\alpha,\alpha,4$ -Tetrachlorotoluene p-Chlorobenzotrichloride	602-093-00-9	226-009-1	5216-25-1	E
Ethylene oxide; oxirane	603-023-00-X	200-849-9	75-21-8	
1-Chloro-2,3-epoxypropane; epichlorhydrin	603-026-00-6	203-439-8	106-89-8	
Propylene oxide; 1,2-epoxypropane; methyloxirane	603-055-00-4	200-879-2	75-56-9	E
2,2'-Bioxirane; 1,2:3,4-diepoxybutane	603-060-00-1	215-979-1	1464-53-5	

Substances	Index No	EC No	CAS No	Notes
2,3-Epoxypropan-1-ol; glycidol oxiranemethanol	603-063-00-8	209-128-3	556-52-5	E
Phenyl glycidyl ether; 2,3-epoxypropyl phenyl ether; 1,2-epoxy-3-phenoxypropane	603-067-00-X	204-557-2	122-60-1	E
Styrene oxide; (epoxyethyl)benzene; phenyloxirane	603-084-00-2	202-476-7	96-09-3	
Furan	603-105-00-5	203-727-3	110-00-9	E
R-2,3-epoxy-1-propanol	603-143-00-2	404-660-4	57044-25-4	E
(R)-1-chloro-2,3-epoxypropane	603-166-00-8	424-280-2	51594-55-9	
4-Amino-3-fluorophenol	604-028-00-X	402-230-0	399-95-1	
5-Allyl-1,3-benzodioxole; safrole	605-020-00-9	202-345-4	94-59-7	E
3-Propanolide; 1,3-propiolactone	606-031-00-1	200-340-1	57-57-8	
4,4'-Bis(dimethylamino)benzophenone Michler's ketone	606-073-00-0	202-027-5	90-94-8	
Urethane(INN); ethyl carbamate	607-149-00-6	200-123-1	51-79-6	
Methyl acrylamidomethoxyacetate (containing $\geq 0,1$ % acrylamide)	607-190-00-X	401-890-7	77402-03-0	
Methyl acrylamidoglycolate (containing $\geq 0,1$ % acrylamide)	607-210-00-7	403-230-3	77402-05-2	
Oxiranemethanol, 4-methylbenzene-sulfonate, (S)-	607-411-00-X	417-210-7	70987-78-9	
Acrylonitrile	608-003-00-4	203-466-5	107-13-1	D, E
2-Nitropropane	609-002-00-1	201-209-1	79-46-9	
2,4-Dinitrotoluene [1]; dinitrotoluene [2]; dinitrotoluene, technical grade	609-007-00-9	204-450-0 [1] 246-836-1 [2]	121-14-2 [1] 25321-14-6 [2]	E
5-Nitroacenaphthene	609-037-00-2	210-025-0	602-87-9	
2-Nitronaphthalene	609-038-00-8	209-474-5	581-89-5	
4-Nitrobiphenyl	609-039-00-3	202-204-7	92-93-3	
Nitrofen (ISO); 2,4-dichlorophenyl4-nitrophenyl ether	609-040-00-9	217-406-0	1836-75-5	
2-Nitroanisole	609-047-00-7	202-052-1	91-23-6	
2,6-Dinitrotoluene	609-049-00-8	210-106-0	606-20-2	E
2,3-dinitrotoluene	609-050-00-3	210-013-5	602-01-7	E
3,4-dinitrotoluene	609-051-00-9	210-222-1	610-39-9	E
3,5-dinitrotoluene	609-052-00-4	210-566-2	618-85-9	E
Hydrazine-tri-nitromethane	609-053-00-X	414-850-9	—	
2,5-dinitrotoluene	609-055-00-0	210-581-4	619-15-8	E
2-Nitrotoluene	609-065-00-5	201-853-3	88-72-2	E
Azobenzene	611-001-00-6	203-102-5	103-33-3	E
Methyl-ONN-azoxymethyl acetate; methyl azoxy methyl acetate	611-004-00-2	209-765-7	592-62-1	
Disodium {5-[(4'-((2,6-hydroxy-3-((2-hydroxy-5-sulphophenyl)azo)phenyl)azo) (1,1'-biphenyl)-4-yl)azo]salicylato(4-)} cuprate(2-); CI Direct Brown 95	611-005-00-8	240-221-1	16071-86-6	

Substances	Index No	EC No	CAS No	Notes
4-o-Tolylazo-o-toluidine; 4-amino-2',3-dimethylazobenzene; fast garnet GBC base; AAT; o-aminoazotoluene	611-006-00-3	202-591-2	97-56-3	
4-Aminoazobenzene	611-008-00-4	200-453-6	60-09-3	
Benzidine based azo dyes; 4,4'-diarylazobiphenyl dyes, with the exception of those specified elsewhere in Annex I to Directive 67/548/EEC	611-024-00-1	—	—	
Disodium 4-amino 3-[[4'-(2,4-diaminophenyl)azo][1,1'-biphenyl]-4-yl]azo]-5-hydroxy-6-(phenylazo)naphthalene-2,7-disulphonate; C.I. Direct Black 38	611-025-00-7	217-710-3	1937-37-7	
Tetrasodium 3,3'-[[1,1'-biphenyl]-4,4'-dylbis(azo)]bis[5-amino-4-hydroxynaphthalene-2,7-disulphonate]; C.I. Direct Blue 6	611-026-00-2	220-012-1	2602-46-2	
Disodium 3,3'-[[1,1'-biphenyl]-4,4'-dylbis(azo)]bis[4-aminonaphthalene-1-sulphonate]; C.I. Direct Red 28	611-027-00-8	209-358-4	573-58-0	
o-Dianisidine based azo dyes; 4,4'-diarylazo-3,3'-dimethoxybiphenyl dyes with the exception of those mentioned elsewhere in Annex I to Directive 67/548/EEC	611-029-00-9	—	—	
o-Tolidine based dyes; 4,4'-diarylazo-3,3'-dimethylbiphenyl dyes, with the exception of those mentioned elsewhere in Annex I to Directive 67/548/EEC	611-030-00-4	—	—	
1,4,5,8-Tetraaminoanthraquinone; C.I. Disperse Blue 1	611-032-00-5	219-603-7	2475-45-8	
6-hydroxy-1-(3-isopropoxypropyl)-4-methyl-2-oxo-5-[4-(phenylazo)phenylazo]-1,2-dihydro-3-pyridinecarbonitrile	611-057-00-1	400-340-3	85136-74-9	
(6-(4-hydroxy-3-(2-methoxyphenylazo)-2-sulfonato-7-naphthylamino)-1,3,5-triazin-2,4-diy)bis[(amino-1-methylethyl)-ammonium] formate	611-058-00-7	402-060-7	108225-03-2	
Trisodium-[4'-(8-acetylamino-3,6-disulfonato-2-naphthylazo)-4''-(6-benzoylamino-3-sulfonato-2-naphthylazo)biphenyl-1,3',3'',1'''-tetraolato-O, O', O'', O''']copper(II)	611-063-00-4	413-590-3	164058-22-4	
(Methylenebis(4,1-phenylenazo(1-(3-(dimethylamino)propyl)-1,2-dihydro-6-hydroxy-4-methyl-2-oxopyridine-5,3-diy)))-1,1'-dipyridinium dichloride dihydrochloride	611-099-00-0	401-500-5	—	
Phenylhydrazine [1] Phenylhydrazinium chloride [2] Phenylhydrazine hydrochloride [3] Phenylhydrazinium sulphate (2:1) [4]	612-023-00-9	202-873-5 [1] 200-444-7 [2] 248-259-0 [3] 257-622-2 [4]	100-63-0 [1] 59-88-1 [2] 27140-08-5 [3] 52033-74-6 [4]	E
2-Methoxyaniline; o-anisidine	612-035-00-4	201-963-1	90-04-0	E
3,3'-Dimethoxybenzidine; o-dianisidine	612-036-00-X	204-355-4	119-90-4	
Salts of 3,3'-dimethoxybenzidine; salts of o-dianisidine	612-037-00-5			
3,3'-Dimethylbenzidine; o-tolidine	612-041-00-7	204-358-0	119-93-7	
4,4'-Diaminodiphenylmethane; 4,4'-methylenedianiline	612-051-00-1	202-974-4	101-77-9	E
3,3'-Dichlorobenzidine; 3,3'-dichlorobiphenyl-4,4'-ylenediamine	612-068-00-4	202-109-0	91-94-1	
Salts of 3,3'-dichlorobenzidine; salts of 3,3'-dichlorobiphenyl-4,4'-ylenediamine	612-069-00-X	210-323-0[1] 265-293-1[2] 277-822-3[3]	612-83-9[1] 64969-34-2[2] 74332-73-3[3]	
N-nitrosodimethylamine; dimethylnitrosamine	612-077-00-3	200-549-8	62-75-9	E

Substances	Index No	EC No	CAS No	Notes
2,2'-Dichloro-4,4'-methylenedianiline; 4,4'-Methylene bis(2-chloroaniline)	612-078-00-9	202-918-9	101-14-4	
Salts of 2,2'-dichloro-4,4-methylenedianiline; salts of 4,4'-methylenebis(2-chloroaniline)	612-079-00-4			
Salts of 3,3'-dimethylbenzidine; salts of o-tolidine	612-081-00-5	210-322-5[1] 265-294-7[2] 277-985-0[3]	612-82-8[1] 64969-36-4[2] 74753-18-7[3]	
1-Methyl-3-nitro-1-nitrosoguanidine	612-083-00-6	200-730-1	70-25-7	
4,4'-Methylenedi-o-toluidine	612-085-00-7	212-658-8	838-88-0	
2,2'-(Nitrosoimino)bisethanol	612-090-00-4	214-237-4	1116-54-7	
o-Toluidine	612-091-00-X	202-429-0	95-53-4	
Nitrosodipropylamine	612-098-00-8	210-698-0	621-64-7	
4-Methyl-m-phenylenediamine	612-099-00-3	202-453-1	95-80-7	
Toluene-2,4-diammonium sulphate	612-126-00-9	265-697-8	65321-67-7	
4-Chloraniline	612-137-00-9	203-401-0	106-47-8	
Diaminotoluene, technical product — mixture of [2] and [3] methyl-phenylenediamine [1] 4-methyl-m-phenylene diamine [2] 2-methyl-m-phenylene diamine [3]	612-151-00-5	246-910-3[1] 202-453-1 [2] 212-513-9 [3]	25376-45-8 [1] 95-80-7 [2] 823-40-5 [3]	E
4-Chloro-o-toluidine [1] 4-chloro-o-toluidine hydrochloride [2]	612-196-00-0	202-441-6 [1] 221-627-8 [2]	95-69-2 [1] 3165-93-3 [2]	E
2,4,5-Trimethylaniline [1] 2,4,5-trimethylaniline hydrochloride [2]	612-197-00-6	205-282-0 [1] - [2]	137-17-7 [1] 21436-97-5 [2]	E
4,4'-Thiodianiline [1] and its salts	612-198-00-1	205-370-9 [1]	139-65-1 [1]	E
4,4'-Oxydianiline [1] and its salts p-Aminophenyl ether [1]	612-199-00-7	202-977-0 [1]	101-80-4 [1]	E
2,4-Diaminoanisole [1] 4-methoxy-m-phenylenediamine 2,4-diaminoanisole sulphate [2]	612-200-00-0	210-406-1 [1] 254-323-9 [2]	615-05-4 [1] 39156-41-7 [2]	
N, N,N',N'-tetramethyl-4,4'-methylenedianiline	612-201-00-6	202-959-2	101-61-1	
C.I. Basic Violet 3 with $\geq 0,1$ % of Michler's ketone (EC No 202-027-5)	612-205-00-8	208-953-6	548-62-9	E
6-Methoxy-m-toluidine p-cresidine	612-209-00-X	204-419-1	120-71-8	E
Ethyleneimine; aziridine	613-001-00-1	205-793-9	151-56-4	
2-Methylaziridine; propyleneimine	613-033-00-6	200-878-7	75-55-8	E
Captafol (ISO); 1,2,3,6-tetrahydro-N-(1,1,2,2-tetrachloroethylthio)phthalimide	613-046-00-7	219-363-3	2425-06-1	

Substances	Index No	EC No	CAS No	Notes
Carbadox (INN); methyl 3-(quinoxalin-2-ylmethylene)carbazate 1,4-dioxide; 2-(methoxycarbonylhydrazonomethyl) quinoxaline 1,4-dioxide	613-050-00-9	229-879-0	6804-07-5	
A mixture of: 1,3,5-tris(3-aminomethylphenyl)-1,3,5-(1H,3H,5H)-triazine-2,4,6-trione; a mixture of oligomers of 3,5-bis(3-aminomethylphenyl)-1-poly[3,5-bis(3-aminomethylphenyl)-2,4,6-trioxo-1,3,5-(1H,3H,5H)-triazin-1-yl]-1,3,5-(1H,3H,5H)-triazine-2,4,6-trione	613-199-00-X	421-550-1	—	
Acrylamide	616-003-00-0	201-173-7	79-06-1	
Thioacetamide	616-026-00-6	200-541-4	62-55-5	
A mixture of: N-[3-hydroxy-2-(2-methylacryloylamino-methoxy)propoxymethyl]-2-methylacrylamide; N-[2,3-Bis-(2-methylacryloylamino-methoxy)propoxymethyl]-2-methylacrylamide; methacrylamide; 2-methyl-N-(2-methyl-acryloylaminomethoxymethyl)-acrylamide; N-2,3-dihydroxypropoxymethyl)-2-methylacrylamide	616-057-00-5	412-790-8	—	
Distillates (coal tar), benzole fraction; Light oil (A complex combination of hydrocarbons obtained by the distillation of coal tar. It consists of hydrocarbons having carbon numbers primarily in the range of C ₄ to C ₁₀ and distilling in the approximate range of 80 to 160 °C.)	648-001-00-0	283-482-7	84650-02-2	
Tar oils, brown-coal; Light oil (The distillate from lignite tar boiling in the range of approximately 80 to 250 °C. Composed primarily of aliphatic and aromatic hydrocarbons and monobasic phenols.)	648-002-00-6	302-674-4	94114-40-6	J
Benzol forerunnings (coal); Light oil redistillate, low boiling (The distillate from coke oven light oil having an approximate distillation range below 100 °C. Composed primarily of C ₄ to C ₆ aliphatic hydrocarbons.)	648-003-00-1	266-023-5	65996-88-5	J
Distillates (coal tar), benzole fraction, BTX-rich; Light oil redistillate, low boiling (A residue from the distillation of crude benzole to remove benzole fronts. Composed primarily of benzene, toluene and xylenes boiling in the range of approximately 75 to 200 °C.)	648-004-00-7	309-984-9	101896-26-8	J
Aromatic hydrocarbons, C ₆₋₁₀ , C ₈ -rich; Light oil redistillate, low boiling	648-005-00-2	292-697-5	90989-41-6	J
Solvent naphtha (coal), light; Light oil redistillate, low boiling	648-006-00-8	287-498-5	85536-17-0	J
Solvent naphtha (coal), xylene-styrene cut; Light oil redistillate, intermediate boiling	648-007-00-3	287-502-5	85536-20-5	J
Solvent naphtha (coal), coumarone-styrene contg.; Light oil redistillate, intermediate boiling	648-008-00-9	287-500-4	85536-19-2	J
Naphtha (coal), distillation residues; Light oil redistillate, high boiling (The residue remaining from the distillation of recovered naphtha. Composed primarily of naphthalene and condensation products of indene and styrene.)	648-009-00-4	292-636-2	90641-12-6	J
Aromatic hydrocarbons, C ₈ ; Light oil redistillate, high boiling	648-010-00-X	292-694-9	90989-38-1	J

Substances	Index No	EC No	CAS No	Notes
Aromatic hydrocarbons, C ₈₋₉ , hydrocarbon resin polymerisation by-product; Light oil redistillate, high boiling (A complex combination of hydrocarbons obtained from the evaporation of solvent under vacuum from polymerised hydrocarbon resin. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₈ through C ₉ and boiling in the range of approximately 120 to 215 °C.)	648-012-00-0	295-281-1	91995-20-9	J
Aromatic hydrocarbons, C ₉₋₁₂ , benzene distillation; Light oil redistillate, high boiling	648-013-00-6	295-551-9	92062-36-7	J
Extract residues (coal), benzole fraction alk., acid ext.; Light oil extract residues, low boiling (The redistillate from the distillate, freed of tar acids and tar bases, from bituminous coal high temperature tar boiling in the approximate range of 90 to 160 °C. It consists predominantly of benzene, toluene and xylenes.)	648-014-00-1	295-323-9	91995-61-8	J
Extract residues (coal tar), benzole fraction alk., acid ext.; Light oil extract residues, low boiling (A complex combination of hydrocarbons obtained by the redistillation of the distillate of high temperature coal tar (tar acid and tar base free). It consists predominantly of unsubstituted and substituted mononuclear aromatic hydrocarbons boiling in the range of 85 to 195 °C.)	648-015-00-7	309-868-8	101316-63-6	J
Extract residues (coal), benzole fraction acid; Light oil extract residues, low boiling (An acid sludge by-product of the sulphuric acid refining of crude high temperature coal. Composed primarily of sulfuric acid and organic compounds.)	648-016-00-2	298-725-2	93821-38-6	J
Extract residues (coal), light oil alk., distillation overheads; Light oil extract residues, low boiling (The first fraction from the distillation of aromatic hydrocarbons, coumarone, naphthalene and indene rich prefractionator bottoms or washed carbolic oil boiling substantially below 145 °C. Composed primarily of C ₇ and C ₈ aliphatic and aromatic hydrocarbons.)	648-017-00-8	292-625-2	90641-02-4	J
Extract residues (coal), light oil alk., acid ext., indene fraction; Light oil extract residues, intermediate boiling	648-018-00-3	309-867-2	101316-62-5	J
Extract residues (coal), light oil alk., indene naphtha fraction; Light oil extract residues, high boiling (The distillate from aromatic hydrocarbons, coumarone, naphthalene and indene rich prefractionator bottoms or washed carbolic oils, having an approximate boiling range of 155 to 180 °C. Composed primarily of indene, indan and trimethylbenzenes.)	648-019-00-9	292-626-8	90641-03-5	J
Solvent naphtha (coal); Light oil extract residues, high boiling (The distillate from either high temperature coal tar, coke oven light oil, or coal tar oil alkaline extract residue having an approximate distillation range of 130 to 210 °C. Composed primarily of indene and other polycyclic ring systems containing a single aromatic ring. May contain phenolic compounds and aromatic nitrogen bases.)	648-020-00-4	266-013-0	65996-79-4	J

Substances	Index No	EC No	CAS No	Notes
Distillates (coal tar), light oils, neutral fraction; Light oil extract residues, high boiling (A distillate from the fractional distillation of high temperature coal tar. Composed primarily of alkyl-substituted one ring aromatic hydrocarbons boiling in the range of approximately 135 to 210 °C. May also include unsaturated hydrocarbons such as indene and coumarone.)	648-021-00-X	309-971-8	101794-90-5	J
Distillates (coal tar), light oils, acid extracts; Light oil extract residues, high boiling (This oil is a complex mixture of aromatic hydrocarbons, primarily indene, naphthalene, coumarone, phenol and o-, m- and p-cresol and boiling in the range of 140 to 215 °C.)	648-022-00-5	292-609-5	90640-87-2	J
Distillates (coal tar), light oils; Carbolic oil (A complex combination of hydrocarbons obtained by distillation of coal tar. It consists of aromatic and other hydrocarbons, phenolic compounds and aromatic nitrogen compounds and distills at the approximate range of 150 to 210 °C.)	648-023-00-0	283-483-2	84650-03-3	J
Tar oils, coal; Carbolic oil (The distillate from high temperature coal tar having an approximate distillation range of 130 to 250 °C. Composed primarily of naphthalene, alkyl naphthalenes, phenolic compounds, and aromatic nitrogen bases.)	648-024-00-6	266-016-7	65996-82-9	J
Extract residues (coal), light oil alk., acid extract; Carbolic oil extract residue (The oil resulting from the acid washing of alkali-washed carbolic oil to remove the minor amounts of basic compounds (tar bases). Composed primarily of indene, indan and alkylbenzenes.)	648-026-00-7	292-624-7	90641-01-3	J
Extract residues (coal), tar oil alkaline; Carbolic oil extract residue (The residue obtained from coal tar oil by an alkaline wash such as aqueous sodium hydroxide after the removal of crude coal tar acids. Composed primarily of naphthalenes and aromatic nitrogen bases.)	648-027-00-2	266-021-4	65996-87-4	J
Extract oils (coal), light oil; Acid Extract (The aqueous extract produced by an acidic wash of alkali-washed carbolic oil. Composed primarily of acid salts of various aromatic nitrogen bases including pyridine, quinoline and their alkyl derivatives.)	648-028-00-8	292-622-6	90640-99-6	J
Pyridine, alkyl derivs.; Crude tar bases (The complex combination of polyalkylated pyridines derived from coal tar distillation or as high-boiling distillates approximately above 150 °C from the reaction of ammonia with acetaldehyde, formaldehyde or paraformaldehyde.)	648-029-00-3	269-929-9	68391-11-7	J
Tar bases, coal, picoline fraction; Distillate bases (Pyridine bases boiling in the range of approximately 125 to 160 °C obtained by distillation of neutralised acid extract of the base-containing tar fraction obtained by the distillation of bituminous coal tars. Composed chiefly of lutidines and picolines.)	648-030-00-9	295-548-2	92062-33-4	J
Tar bases, coal, lutidine fraction; Distillate bases	648-031-00-4	293-766-2	91082-52-9	J

Substances	Index No	EC No	CAS No	Notes
Extract oils (coal), tar base, collidine fraction; Distillate bases (The extract produced by the acid extraction of bases from crude coal tar aromatic oils, neutralisation, and distillation of the bases. Composed primarily of collidines, aniline, toluidines, lutidines, xyli-dines.)	648-032-00-X	273-077-3	68937-63-3	J
Tar bases, coal, collidine fraction; Distillate bases (The distillation fraction boiling in the range of approximately 181 to 186 °C from the crude bases obtained from the neutralised, acid-extracted base-containing tar fractions obtained by the distillation of bituminous coal tar. It contains chiefly aniline and collidines.)	648-033-00-5	295-543-5	92062-28-7	J
Tar Bases, coal, aniline fraction; Distillate bases (The distillation fraction boiling in the range of approximately 180 to 200 °C from the crude bases obtained by dephenolating and debasing the carbolated oil from the distillation of coal tar. It contains chiefly aniline, collidines, lutidines and toluidines.)	648-034-00-0	295-541-4	92062-27-6	J
Tar bases, coal, toluidine fraction; Distillate bases	648-035-00-6	293-767-8	91082-53-0	J
Distillates (petroleum), alkene-alkyne manuf. pyrolysis oil, mixed with high-temperature coal tar, indene fraction; Redistillates (A complex combination of hydrocarbons obtained as a redistillate from the fractional distillation of bituminous coal high temperature tar and residual oils that are obtained by the pyrolytic production of alkenes and alkynes from petroleum products or natural gas. It consists predominantly of indene and boils in a range of approximately 160 to 190 °C.)	648-036-00-1	295-292-1	91995-31-2	J
Distillates (coal), coal tar-residual pyrolysis oils, naphthalene oils; Redistillates (The redistillate obtained from the fractional distillation of bituminous coal high temperature tar and pyrolysis residual oils and boiling in the range of approximately 190 to 270 °C. Composed primarily of substituted dinuclear aromatics.)	648-037-00-7	295-295-8	91995-35-6	J
Extract oils (coal), coal tar-residual pyrolysis oils, naphthalene oil, redistillate; Redistillates (The redistillate from the fractional distillation of dephenolated and debased methyl-naphthalene oil obtained from bituminous coal high temperature tar and pyrolysis residual oils boiling in the approximate range of 220 to 230 °C. It consists predominantly of unsubstituted and substituted dinuclear aromatic hydrocarbons.)	648-038-00-2	295-329-1	91995-66-3	J
Extract oils (coal), coal tar-residual pyrolysis oils, naphthalene oils; Redistillates (A neutral oil obtained by debasing and dephenolating the oil obtained from the distillation of high temperature tar and pyrolysis residual oils which has a boiling range of 225 to 255 °C. Composed primarily of substituted dinuclear aromatic hydrocarbons.)	648-039-00-8	310-170-0	122070-79-5	J
Extract oils (coal), coal tar residual pyrolysis oils, naphthalene oil, distillation residues; Redistillates (Residue from the distillation of dephenolated and debased methyl-naphthalene oil (from bituminous coal tar and pyrolysis residual oils) with a boiling range of 240 to 260 °C. Composed primarily of substituted dinuclear aromatic and heterocyclic hydrocarbons.)	648-040-00-3	310-171-6	122070-80-8	J

Substances	Index No	EC No	CAS No	Notes
Absorption oils, bicyclo arom. and heterocyclic hydrocarbon fraction; Wash oil redistillate (A complex combination of hydrocarbons obtained as a redistillate from the distillation of wash oil. It consists predominantly of two-ringed aromatic and heterocyclic hydrocarbons boiling in the range of approximately 260 to 290 °C.)	648-041-00-9	309-851-5	101316-45-4	M
Distillates (coal tar), upper, fluorene-rich; Wash oil redistillate (A complex combination of hydrocarbons obtained by the crystallisation of tar oil. It consists of aromatic and polycyclic hydrocarbons primarily fluorene and some acenaphthene.)	648-042-00-4	284-900-0	84989-11-7	M
Creosote oil, acenaphthene fraction, acenaphthene-free; Wash oil redistillate (The oil remaining after removal by a crystallisation process of acenaphthene from acenaphthene oil from coal tar. Composed primarily of naphthalene and alkyl naphthalenes.)	648-043-00-X	292-606-9	90640-85-0	H
Distillates (coal tar), heavy oils; Heavy anthracene oil (Distillate from the fractional distillation of coal tar of bituminous coal, with boiling range of 240 to 400 °C. Composed primarily of tri- and polynuclear hydrocarbons and heterocyclic compounds.)	648-044-00-5	292-607-4	90640-86-1	
Anthracene oil, acid ext.; Anthracene oil extract residue (A complex combination of hydrocarbons from the base-freed fraction obtained from the distillation of coal tar and boiling in the range of approximately 325 to 365 °C. It contains predominantly anthracene and phenanthrene and their alkyl derivatives.)	648-046-00-6	295-274-3	91995-14-1	M
Distillates (coal tar); Heavy anthracene oil (The distillate from coal tar having an approximate distillation range of 100 to 450 °C. Composed primarily of two to four membered condensed ring aromatic hydrocarbons, phenolic compounds, and aromatic nitrogen bases.)	648-047-00-1	266-027-7	65996-92-1	M
Distillates (coal tar), pitch, heavy oils; Heavy anthracene oil (The distillate from the distillation of the pitch obtained from bituminous high temperature tar. Composed primarily of tri- and polynuclear aromatic hydrocarbons and boiling in the range of approximately 300 to 470 °C. The product may also contain heteroatoms.)	648-048-00-7	295-312-9	91995-51-6	M
Distillates (coal tar), pitch; Heavy anthracene oil (The oil obtained from condensation of the vapours from the heat treatment of pitch. Composed primarily of two-to four-ring aromatic compounds boiling in the range of 200 to greater than 400 °C.)	648-049-00-2	309-855-7	101316-49-8	M
Distillates (coal tar), heavy oils, pyrene fraction; Heavy anthracene oil redistillate (The redistillate obtained from the fractional distillation of pitch distillate boiling in the range of approximately 350 to 400 °C. Consists predominantly of tri- and polynuclear aromatic and heterocyclic hydrocarbons.)	648-050-00-8	295-304-5	91995-42-5	M

Substances	Index No	EC No	CAS No	Notes
Distillates (coal tar), pitch, pyrene fraction; Heavy anthracene oil redistillate (The redistillate obtained from the fractional distillation of pitch distillate and boiling in the range of approximately 380 to 410 °C. Composed primarily of tri- and polynuclear aromatic hydrocarbons and heterocyclic compounds.)	648-051-00-3	295-313-4	91995-52-7	M
Paraffin waxes (coal), brown-coal high-temperature tar, carbon-treated; Coal tar extract (A complex combination of hydrocarbons obtained by the treatment of lignite carbonisation tar with activated carbon for removal of trace constituents and impurities. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	648-052-00-9	308-296-6	97926-76-6	M
Paraffin waxes (coal), brown-coal high-temperature tar, carbon-treated; Coal tar extract (A complex combination of hydrocarbons obtained by the treatment of lignite carbonisation tar with bentonite for removal of trace constituents and impurities. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	648-053-00-4	308-297-1	97926-77-7	M
Pitch; Pitch	648-054-00-X	263-072-4	61789-60-4	M
Pitch, coal tar, high temperature; Pitch (The residue from the distillation of high temperature coal tar. A black solid with an approximate softening point from 30 to 180 °C. Composed primarily of a complex mixture of three or more membered condensed ring aromatic hydrocarbons.)	648-055-00-5	266-028-2	65996-93-2	
Pitch, coal tar, high temperature, heat-treated; Pitch (The heat treated residue from the distillation of high temperature coal tar. A black solid with an approximate softening point from 80 to 180 °C. Composed primarily of a complex mixture of three or more membered condensed ring aromatic hydrocarbons.)	648-056-00-0	310-162-7	121575-60-8	M
Pitch, coal tar, high temperature, secondary; Pitch redistillate (The residue obtained during the distillation of high boiling fractions from bituminous coal high temperature tar and/or pitch coke oil, with a softening point of 140 to 170 °C according to DIN 52025. Composed primarily of tri- and polynuclear aromatic compounds which also contain heteroatoms.)	648-057-00-6	302-650-3	94114-13-3	M
Residues (coal tar), pitch distillation; Pitch redistillate (Residue from the fractional distillation of pitch distillate boiling in the range of approximately 400 to 470 °C. Composed primarily of polynuclear aromatic hydrocarbons, and heterocyclic compounds.)	648-058-00-1	295-507-9	92061-94-4	M
Tar, coal, high-temperature, distillation and storage residues; Coal tar solids residue (Coke- and ash-containing solid residues that separate on distillation and thermal treatment of bituminous coal high temperature tar in distillation installations and storage vessels. Consists predominantly of carbon and contains a small quantity of hetero compounds as well as ash components.)	648-059-00-7	295-535-1	92062-20-9	M
Tar, coal, storage residues; Coal tar solids residue (The deposit removed from crude coal tar storages. Composed primarily of coal tar and carbonaceous particulate matter.)	648-060-00-2	293-764-1	91082-50-7	M

Substances	Index No	EC No	CAS No	Notes
Tar, coal, high-temperature, residues; Coal tar solids residue (Solids formed during the coking of bituminous coal to produce crude bituminous coal high temperature tar. Composed primarily of coke and coal particles, highly aromatised compounds and mineral substances.)	648-061-00-8	309-726-5	100684-51-3	M
Tar, coal, high-temperature, high-solids; Coal tar solids residue (The condensation product obtained by cooling, to approximately ambient temperature, the gas evolved in the high temperature (greater than 700 °C) destructive distillation of coal. Composed primarily of a complex mixture of condensed ring aromatic hydrocarbons with a high solid content of coal-type materials.)	648-062-00-3	273-615-7	68990-61-4	M
Waste solids, coal-tar pitch coking; Coal tar solids residue (The combination of wastes formed by the coking of bituminous coal tar pitch. It consists predominantly of carbon.)	648-063-00-9	295-549-8	92062-34-5	M
Extract residues (coal), brown; Coal tar extract (The residue from extraction of dried coal.)	648-064-00-4	294-285-0	91697-23-3	M
Paraffin waxes (coal), brown-coal-high-temperature tar; Coal tar extract (A complex combination of hydrocarbons obtained from lignite carbonisation tar by solvent crystallisation (solvent deoiling), by sweating or an adducting process. It consists predominantly of straight and branched chain saturated hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	648-065-00-X	295-454-1	92045-71-1	M
Paraffin waxes (coal), brown-coal-high-temperature tar, hydrotreated; Coal tar extract (A complex combination of hydrocarbons obtained from lignite carbonisation tar by solvent crystallisation (solvent deoiling), by sweating or an adducting process treated with hydrogen in the presence of a catalyst. It consists predominantly of straight and branched chain saturated hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	648-066-00-5	295-455-7	92045-72-2	M
Paraffin waxes (coal), brown-coal high-temp tar, silicic acid-treated; Coal tar extract (A complex combination of hydrocarbons obtained by the treatment of lignite carbonisation tar with silicic acid for removal of trace constituents and impurities. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	648-067-00-0	308-298-7	97926-78-8	M
Tar, coal, low-temperature, distillation residues; Tar oil, intermediate boiling (Residues from fractional distillation of low temperature coal tar to remove oils that boil in a range up to approximately 300 °C. Composed primarily of aromatic compounds.)	648-068-00-6	309-887-1	101316-85-2	M
Pitch, coal tar, low-temp; Pitch residue (A complex black solid or semi-solid obtained from the distillation of a low temperature coal tar. It has a softening point within the approximate range of 40 to 180 °C. Composed primarily of a complex mixture of hydrocarbons.)	648-069-00-1	292-651-4	90669-57-1	M

Substances	Index No	EC No	CAS No	Notes
Pitch, coal tar, low-temperature, oxidised; Pitch residue, oxidised (The product obtained by air-blowing, at elevated temperature, low-temperature coal tar pitch. It has a softening-point within the approximate range of 70 to 180 °C. Composed primarily of a complex mixture of hydrocarbons.)	648-070-00-7	292-654-0	90669-59-3	M
Pitch, coal tar, low-temperature, heat-treated; Pitch residue, oxidised; Pitch residue, heat-treated (A complex black solid obtained by the heat treatment of low temperature coal tar pitch. It has a softening point within the approximate range of 50 to 140 °C. Composed primarily of a complex mixture of aromatic compounds.)	648-071-00-2	292-653-5	90669-58-2	M
Distillates (coal-petroleum), condensed ring arom.; Distillates (The distillate from a mixture of coal and tar and aromatic petroleum streams having an approximate distillation range of 220 to 450 °C. Composed primarily of three- to four-membered condensed ring aromatic hydrocarbons.)	648-072-00-8	269-159-3	68188-48-7	M
Aromatic hydrocarbons, C ₂₀₋₂₈ , polycyclic, mixed coal-tar pitch-polyethylene-polypropylene pyrolysis-derived; Pyrolysis products (A complex combination of hydrocarbons obtained from mixed coal tar pitch-polyethylene-polypropylene pyrolysis. Composed primarily of polycyclic aromatic hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₂₈ and having a softening point of 100 to 220 °C according to DIN 52025.)	648-073-00-3	309-956-6	101794-74-5	M
Aromatic hydrocarbons, C ₂₀₋₂₈ , polycyclic, mixed coal-tar pitch-polyethylene pyrolysis-derived; Pyrolysis products (A complex combination of hydrocarbons obtained from mixed coal tar pitch-polyethylene pyrolysis. Composed primarily of polycyclic aromatic hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₂₈ and having a softening point of 100 to 220 °C according to DIN 52025.)	648-074-00-9	309-957-1	101794-75-6	M
Aromatic hydrocarbons, C ₂₀₋₂₈ , polycyclic, mixed coal-tar pitch-poly-styrene pyrolysis-derived; Pyrolysis products (A complex combination of hydrocarbons obtained from mixed coal tar pitch-polystyrene pyrolysis. Composed primarily of polycyclic aromatic hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₂₈ and having a softening point of 100 to 220 °C according to DIN 52025.)	648-075-00-4	309-958-7	101794-76-7	M
Pitch, coal tar-petroleum; Pitch residues (The residue from the distillation of a mixture of coal tar and aromatic petroleum streams. A solid with a softening point from 40 to 180 °C. Composed primarily of a complex combination of three or more membered condensed ring aromatic hydrocarbons.)	648-076-00-X	269-109-0	68187-57-5	M
Phenanthrene, distillation residues; Heavy anthracene oil redistillate (Residue from the distillation of crude phenanthrene boiling in the approximate range of 340 to 420 °C. It consists predominantly of phenanthrene, anthracene and carbazole.)	648-077-00-5	310-169-5	122070-78-4	M

Substances	Index No	EC No	CAS No	Notes
Distillates (coal tar), upper, fluorene-free; Wash oil redistillate (A complex combination of hydrocarbons obtained by the crystallisation of tar oil. It consists of aromatic polycyclic hydrocarbons, primarily diphenyl, dibenzofuran and acenaphthene.)	648-078-00-0	284-899-7	84989-10-6	M
Residues (coal tar), creosote oil distillation; Wash oil redistillate (The residue from the fractional distillation of wash oil boiling in the approximate range of 270 to 330 °C. It consists predominantly of dinuclear aromatic and heterocyclic hydrocarbons.)	648-080-00-1	295-506-3	92061-93-3	H
Distillates (coal), coke-oven light oil, naphthalene cut; Naphthalene oil (The complex combination of hydrocarbons obtained from prefractionation (continuous distillation) of coke oven light oil. It consists predominantly of naphthalene, coumarone and indene and boils above 148 °C.)	648-084-00-3	285-076-5	85029-51-2	J, M
Distillates (coal tar), naphthalene oils, naphthalene-low; Naphthalene oil redistillate (A complex combination of hydrocarbons obtained by crystallisation of naphthalene oil. Composed primarily of naphthalene, alkyl naphthalenes and phenolic compounds.)	648-086-00-4	284-898-1	84989-09-3	J, M
Distillates (coal tar), naphthalene oil crystn. mother liquor; Naphthalene oil redistillate (A complex combination of organic compounds obtained as a filtrate from the crystallisation of the naphthalene fraction from coal tar and boiling in the range of approximately 200 to 230 °C. Contains chiefly naphthalene, thionaphthene and alkylnaphthalenes.)	648-087-00-X	295-310-8	91995-49-2	J, M
Extract residues (coal), naphthalene oil, alk.; Naphthalene oil extract residue (A complex combination of hydrocarbons obtained from the alkali washing of naphthalene oil to remove phenolic compounds (tar acids). It is composed of naphthalene and alkyl naphthalenes.)	648-088-00-5	310-166-9	121620-47-1	J, M
Extract residues (coal), naphthalene oil, alk., naphthalene-low; Naphthalene oil extract residue (A complex combination of hydrocarbons remaining after the removal of naphthalene from alkali-washed naphthalene oil by a crystallisation process. It is composed primarily of naphthalene and alkyl naphthalenes.)	648-089-00-0	310-167-4	121620-48-2	J, M
Distillates (coal tar), naphthalene oils, naphthalene-free, alk. extracts; Naphthalene oil extract residue (The oil remaining after the removal of phenolic compounds (tar acids) from drained naphthalene oil by an alkali wash. Composed primarily of naphthalene and alkyl naphthalenes.)	648-090-00-6	292-612-1	90640-90-7	J, M
Extract residues (coal), naphthalene oil alk., distillation overheads; Naphthalene oil extract residue (The distillation from alkali-washed naphthalene oil having an approximate distillation range of 180 to 220 °C. Composed primarily of naphthalene, alkybenzenes, indene and indan.)	648-091-00-1	292-627-3	90641-04-6	J, M
Distillates (coal tar), naphthalene oils, methylnaphthalene fraction; Methylnaphthalene oil (A distillate from the fractional distillation of high temperature coal tar. Composed primarily of substituted two ring aromatic hydrocarbons and aromatic nitrogen bases boiling in the range of approximately 225 to 255 °C.)	648-092-00-7	309-985-4	101896-27-9	J, M

Substances	Index No	EC No	CAS No	Notes
Distillates (coal tar), naphthalene oils, indole-methylnaphthalene fraction; Methylnaphthalene oil (A distillate from the fractional distillation of high temperature coal tar. Composed primarily of indole and methylnaphthalene boiling in the range of approximately 235 to 255 °C.)	648-093-00-2	309-972-3	101794-91-6	J, M
Distillates (coal tar), naphthalene oils, acid extracts; Methylnaphthalene oil extract residue (A complex combination of hydrocarbons obtained by debasing the methylnaphthalene fraction obtained by the distillation of coal tar and boiling in the range of approximately 230 to 255 °C. Contains chiefly 1(2)-methylnaphthalene, naphthalene, dimethylnaphthalene and biphenyl.)	648-094-00-8	295-309-2	91995-48-1	J, M
Extract residues (coal), naphthalene oil alk., distillation residues; Methylnaphthalene oil extract residue (The residue from the distillation of alkali-washed naphthalene oil having an approximate distillation range of 220 to 300 °C. Composed primarily of naphthalene, alkyl naphthalenes and aromatic nitrogen bases.)	648-095-00-3	292-628-9	90641-05-7	J, M
Extract oils (coal), acidic, tar-base free; Methylnaphthalene oil extract residue (The extract oil boiling in the range of approximately 220 to 265 °C from coal tar alkaline extract residue produced by an acidic wash such as aqueous sulfuric acid after distillation to remove tar bases. Composed primarily of alkyl naphthalenes.)	648-096-00-9	284-901-6	84989-12-8	J, M
Distillates (coal tar), benzole fraction, distillation residues; Wash oil (A complex combination of hydrocarbons obtained from the distillation of crude benzole (high temperature coal tar). It may be a liquid with the approximate distillation range of 150 to 300 °C or a semi-solid or solid with a melting point up to 70 °C. It is composed primarily of naphthalene and alkyl naphthalenes.)	648-097-00-4	310-165-3	121620-46-0	J, M
Creosote oil, acenaphthene fraction Wash oil	648-098-00-X	292-605-3	90640-84-9	H
Creosote oil	648-099-00-5	263-047-8	61789-28-4	H
Creosote oil, high-boiling distillate; Wash oil (The high-boiling distillation fraction obtained from the high temperature carbonisation of bituminous coal which is further refined to remove excess crystalline salts. It consists primarily of creosote oil with some of the normal polynuclear aromatic salts, which are components of coal tar distillates, removed. It is crystal free at approximately 5 °C.)	648-100-00-9	274-565-9	70321-79-8	H
Creosote	648-101-00-4	232-287-5	8001-58-9	H
Extract residues (coal), creosote oil acid; Wash oil extract residue (A complex combination of hydrocarbons from the base-freed fraction from the distillation of coal tar, boiling in the range of approximately 250 to 280 °C. It consists predominantly of biphenyl and isomeric diphenylnaphthalenes.)	648-102-00-X	310-189-4	122384-77-4	H
Anthracene oil, anthracene paste; Anthracene oil fraction (The anthracene-rich solid obtained by the crystallisation and centrifuging of anthracene oil. It is composed primarily of anthracene, carbazole and phenanthrene.)	648-103-00-5	292-603-2	90640-81-6	J, M

Substances	Index No	EC No	CAS No	Notes
Anthracene oil, anthracene-low; Anthracene oil fraction (The oil remaining after the removal, by a crystallisation process, of an anthracene-rich solid (anthracene paste) from anthracene oil. It is composed primarily of two, three and four membered aromatic compounds.)	648-104-00-0	292-604-8	90640-82-7	J, M
Residues (coal tar), anthracene oil distillation; Anthracene oil fraction (The residue from the fraction distillation of crude anthracene boiling in the approximate range of 340 to 400 °C. It consists predominantly of tri- and polynuclear aromatic and heterocyclic hydrocarbons.)	648-105-00-6	295-505-8	92061-92-2	J, M
Anthracene oil, anthracene paste, anthracene fraction; Anthracene oil fraction (A complex combination of hydrocarbons from the distillation of anthracene obtained by the crystallisation of anthracene oil from bituminous high temperature tar and boiling in the range of 330 to 350 °C. It contains chiefly anthracene, carbazole and phenanthrene.)	648-106-00-1	295-275-9	91995-15-2	J, M
Anthracene oil, anthracene paste, carbazole fraction; Anthracene oil fraction (A complex combination of hydrocarbons from the distillation of anthracene obtained by crystallisation of anthracene oil from bituminous coal high temperature tar and boiling in the approximate range of 350 to 360 °C. It contains chiefly anthracene, carbazole and phenanthrene.)	648-107-00-7	295-276-4	91995-16-3	J, M
Anthracene oil, anthracene paste, distillation lights; Anthracene oil fraction (A complex combination of hydrocarbons from the distillation of anthracene obtained by crystallisation of anthracene oil from bituminous light temperature tar and boiling in the range of approximately 290 to 340 °C. It contains chiefly trinuclear aromatics and their dihydro derivatives.)	648-108-00-2	295-278-5	91995-17-4	J, M
Tar oils, coal, low-temperature; Tar oil, high boiling (A distillate from low-temperature coal tar. Composed primarily of hydrocarbons, phenolic compounds and aromatic nitrogen bases boiling in the range of approximately 160 to 340 °C.)	648-109-00-8	309-889-2	101316-87-4	J, M
Phenols, ammonia liquor ext.; Alkaline extract (The combination of phenols extracted, using isobutyl acetate, from the ammonia liquor condensed from the gas evolved in low-temperature (less than 700 °C) destructive distillation of coal. It consists predominantly of a mixture of monohydric and dihydric phenols.)	648-111-00-9	284-881-9	84988-93-2	J, M
Distillates (coal tar), light oils, alkaline extracts; Alkaline extract (The aqueous extract from carbolic oil produced by an alkaline wash such as aqueous sodium hydroxide. Composed primarily of the alkali salts of various phenolic compounds.)	648-112-00-4	292-610-0	90640-88-3	J, M
Extracts, coal tar oil alkaline; Alkaline extract (The extract from coal tar oil produced by an alkaline wash such as aqueous sodium hydroxide. Composed primarily of the alkali salts of various phenolic compounds.)	648-113-00-X	266-017-2	65996-83-0	J, M

Substances	Index No	EC No	CAS No	Notes
Distillates (coal tar), naphthalene oils, alkaline extracts; Alkaline extract (The aqueous extract from naphthalene oil produced by an alkaline wash such as aqueous sodium hydroxid. Composed primarily of the alkali salts of various phenolic compounds.)	648-114-00-5	292-611-6	90640-89-4	J, M
Extract residues (coal), tar oil alkaline, carbonated, limed; Crude phenols (The product obtained by treatment of coal tar oil alkaline extract with CO ₂ and CaO. Composed primarily of CaCO ₃ , Ca(OH) ₂ , Na ₂ CO ₃ and other organic and inorganic impurities.)	648-115-00-0	292-629-4	90641-06-8	J, M
Tar acids, brown-coal, crude; Crude phenols (An acidified alkaline extract of brown coal tar distillate. Composed primarily of phenol and phenol homologs.)	648-117-00-1	309-888-7	101316-86-3	J, M
Tar acids, brown-coal gasification; Crude phenols (A complex combination of organic compounds obtained from brown coal gasification. Composed primarily of C ₆₋₁₀ hydroxy aromatic phenols and their homologs.)	648-118-00-7	295-536-7	92062-22-1	J, M
Tar acids, distillation residues; Distillate phenols (A residue from the distillation of crude phenol from coal. It consists predominantly of phenols having carbon numbers in the range of C ₈ through C ₁₀ with a softening point of 60 to 80 °C.)	648-119-00-2	306-251-5	96690-55-0	J, M
Tar acids, methylphenol fraction; Distillate phenols (The fraction of tar acid rich in 3- and 4-methylphenol, recovered by distillation of low-temperature coal tar crude tar acids.)	648-120-00-8	284-892-9	84989-04-8	J, M
Tar acids, polyalkylphenol fraction; Distillate phenols (The fraction of tar acids, recovered by distillation of low-temperature coal tar crude tar acids, having an approximate boiling range of 225 to 320 °C. Composed primarily of polyalkylphenols.)	648-121-00-3	284-893-4	84989-05-9	J, M
Tar acids, xylenol fraction; Distillate phenols (The fraction of tar acids, rich in 2,4- and 2,5-dimethylphenol, recovered by distillation of low-temperature coal tar crude tar acids.)	648-122-00-9	284-895-5	84989-06-0	J, M
Tar acids, ethylphenol fraction; Distillate phenols (The fraction of tar acids, rich in 3- and 4-ethylphenol, recovered by distillation of low-temperature coal tar crude tar acids.)	648-123-00-4	284-891-3	84989-03-7	J, M
Tar acids, 3,5-xylenol fraction; Distillate phenols (The fraction of tar acids, rich in 3,5-dimethylphenol, recovered by distillation of low-temperature coal tar acids.)	648-124-00-X	284-896-0	84989-07-1	J, M
Tar acids, residues, distillates, first-cut; Distillate phenols (The residue from the distillation in the range of 235 to 355 °C of light carbolic oil.)	648-125-00-5	270-713-1	68477-23-6	J, M
Tar acids, cresylic, residues; Distillate phenols (The residue from crude coal tar acids after removal of phenol, cresols, xylenols and any higher boiling phenols. A black solid with a melting point approximately 80 °C. Composed primarily of polyalkylphenols, resin gums, and inorganic salts.)	648-126-00-0	271-418-0	68555-24-8	J, M

Substances	Index No	EC No	CAS No	Notes
Phenols, C ₉₋₁₁ ; Distillate phenols	648-127-00-6	293-435-2	91079-47-9	J, M
Tar acids, cresylic; Distillate phenols (A complex combination of organic compounds obtained from brown coal and boiling in the range of approximately 200 to 230 °C. It contains chiefly phenols and pyridine bases.)	648-128-00-1	295-540-9	92062-26-5	J, M
Tar acids, brown-coal, C ₂ -alkylphenol fraction; Distillate phenols (The distillate from the acidification of alkaline washed lignite tar distillate boiling in the range of approximately 200 to 230 °C. Composed primarily of m- and p-ethylphenol as well as cresols and xylenols.)	648-129-00-7	302-662-9	94114-29-1	J, M
Extract oils (coal), naphthalene oils; Acid extract (The aqueous extract produced by an acidic wash of alkali-washed naphthalene oil. Composed primarily of acid salts of various aromatic nitrogen bases including pyridine, quinoline and their alkyl derivatives.)	648-130-00-2	292-623-1	90641-00-2	J, M
Tar bases, quinoline derivs.; Distillate bases	648-131-00-8	271-020-7	68513-87-1	J, M
Tar bases, coal, quinoline derivs. fraction; Distillate bases	648-132-00-3	274-560-1	70321-67-4	J, M
Tar bases, coal, distillation residues; Distillate bases (The distillation residue remaining after the distillation of the neutralised, acid-extracted base-containing tar fractions obtained by the distillation of coal tars. It contains chiefly aniline, collidines, quinoline and quinoline derivatives and toluidines.)	648-133-00-9	274-544-0	92062-29-8	J, M
Hydrocarbon oils, arom., mixed with polyethylene and polypropylene, pyrolysed, light oil fraction; Heat treatment products (The oil obtained from the heat treatment of a polyethylene/polypropylene mixture with coal tar pitch or aromatic oils. It consists predominantly of benzene and its homologs boiling in a range of approximately 70 to 120 °C.)	648-134-00-4	309-745-9	100801-63-6	J, M
Hydrocarbon oils, arom., mixed with polyethylene, pyrolysed, light oil fraction; Heat treatment products (The oil obtained from the heat treatment of polyethylene with coal tar pitch or aromatic oils. It consists predominantly of benzene and its homologs boiling in a range of 70 to 120 °C.)	648-135-00-X	309-748-5	100801-65-8	J, M
Hydrocarbon oils, arom., mixed with polystyrene, pyrolysed, light oil fraction; Heat treatment products (The oil obtained from the heat treatment of polystyrene with coal tar pitch or aromatic oils. It consists predominantly of benzene and its homologs boiling in a range of approximately 70 to 210 °C.)	648-136-00-5	309-749-0	100801-66-9	J, M
Extract residues (coal), tar oil alkaline, naphthalene distillation residues; Naphthalene oil extract residue (The residue obtained from chemical oil extracted after the removal of naphthalene by distillation composed primarily of two to four membered condensed ring aromatic hydrocarbons and aromatic nitrogen bases.)	648-137-00-0	277-567-8	736665-18-6	J, M

Substances	Index No	EC No	CAS No	Notes
Creosote oil, low-boiling distillate; Wash oil (The low-boiling distillation fraction obtained from the high temperature carbonisation of bituminous coal, which is further refined to remove excess crystalline salts. It consists primarily of creosote oil with some of the normal polynuclear aromatic salts, which are components of coal tar distillate, removed. It is crystal free at approximately 38 °C.)	648-138-00-6	274-566-4	70321-80-1	H
Tar acids, cresylic, sodium salts, caustic solutions.; Alkaline extract	648-139-00-1	272-361-4	68815-21-4	J, M
Extract oils (coal), tar base; Acid extract (The extract from coal tar oil alkaline extract residue produced by an acidic wash such as aqueous sulfuric acid after distillation to remove naphthalene. Composed primarily of the acid salts of various aromatic nitrogen bases including pyridine, quinoline, and their alkyl derivatives.)	648-140-00-7	266-020-9	65996-86-3	J, M
Tar bases, coal, crude; Crude tar bases (The reaction product obtained by neutralising coal tar base extract oil with an alkaline solution, such as aqueous sodium hydroxide, to obtain the free bases. Composed primarily of such organic bases as acridine, phenanthridine, pyridine, quinoline and their alkyl derivatives.)	648-141-00-2	266-018-8	65996-84-1	J, M
Residues (coal), liquid solvent extraction; (A cohesive powder composed of coal mineral matter and undissolved coal remaining after extraction of coal by a liquid solvent.)	648-142-00-8	302-681-2	94114-46-2	M
Coal liquids, liquid solvent extraction solution.; (The product obtained by filtration of coal mineral matter and undissolved coal from coal extract solution produced by digesting coal in a liquid solvent. A black, viscous, highly complex liquid combination composed primarily of aromatic and partly hydrogenated aromatic hydrocarbons, aromatic nitrogen compounds, aromatic sulfur compounds, phenolic and other aromatic oxygen compounds and their alkyl derivatives.)	648-143-00-3	302-682-8	94114-47-3	M
Coal liquids, liquid solvent extraction; (The substantially solvent-free product obtained by the distillation of the solvent from filtered coal extract solution produced by digesting coal in a liquid solvent. A black semi-solid, composed primarily of a complex combination of condensed-ring aromatic hydrocarbons, aromatic nitrogen compounds, aromatic sulfur compounds, phenolic compounds and other aromatic oxygen compounds, and their alkyl derivatives.)	648-144-00-9	302-683-3	94114-48-4	M
Light oil (coal), coke-oven; Crude benzole (The volatile organic liquid extracted from the gas evolved in the high temperature (greater than 700 °C) destructive distillation of coal. Composed primarily of benzene, toluene, and xylenes. May contain other minor hydrocarbon constituents.)	648-147-00-5	266-012-5	65996-78-3	J
Distillates (coal), liquid solvent extraction, primary; (The liquid product of condensation of vapours emitted during the digestion of coal in a liquid solvent and boiling in the range of approximately 30 to 300 °C. Composed primarily of partly hydrogenated condensed-ring aromatic hydrocarbons, aromatic compounds containing nitrogen, oxygen and sulfur, and their alkyl derivatives having carbon numbers predominantly in the range of C ₄ through C ₁₄ .)	648-148-00-0	302-688-0	94114-52-0	J

Substances	Index No	EC No	CAS No	Notes
Distillates (coal), solvent extraction, hydrocracked; (Distillate obtained by hydrocracking of coal extract or solution produced by the liquid solvent extraction or supercritical gas extraction process and boiling in the range of approximately 30 to 300 °C. Composed primarily of aromatic, hydrogenated aromatic and naphthenic compounds, their alkyl derivatives and alkanes with carbon numbers predominantly in the range of C ₄ through C ₁₄ . Nitrogen, sulfur and oxygen-containing aromatic and hydrogenated aromatic compounds are also present.)	648-149-00-6	302-689-6	94114-53-1	J
Naphtha (coal), solvent extraction, hydrocracked; (Fraction of the distillate obtained by hydrocracking of coal extract or solution produced by the liquid solvent extraction or supercritical gas extraction processes and boiling in the range of approximately 30 to 180 °C. Composed primarily of aromatic, hydrogenated aromatic and naphthenic compounds, their alkyl derivatives and alkanes with carbon numbers predominantly in the range of C ₄ to C ₉ . Nitrogen, sulfur and oxygen-containing aromatic and hydrogenated aromatic compounds are also present.)	648-150-00-1	302-690-1	94114-54-2	J
Gasoline, coal solvent extraction, hydrocracked naphtha; (Motor fuel produced by the reforming of the refined naphtha fraction of the products of hydrocracking of coal extract or solution produced by the liquid solvent extraction or supercritical gas extraction processes and boiling in the range of approximately 30 to 180 °C. Composed primarily of aromatic and naphthenic hydrocarbons, their alkyl derivatives and alkyl hydrocarbons having carbon numbers in the range of C ₄ through C ₉ .)	648-151-00-7	302-691-7	94114-55-3	J
Distillates (coal), solvent extraction, hydrocracked middle; (Distillate obtained from the hydrocracking of coal extract or solution produced by the liquid solvent extraction or supercritical gas extraction processes and boiling in the range of approximately 180 to 300 °C. Composed primarily of two-ring aromatic, hydrogenated aromatic and naphthenic compounds, their alkyl derivatives and alkanes having carbon numbers predominantly in the range of C ₉ through C ₁₄ . Nitrogen, sulfur and oxygen-containing compounds are also present.)	648-152-00-2	302-692-2	94114-56-4	J
Distillates (coal), solvent extraction, hydrocracked hydrogenated middle; (Distillate from the hydrogenation of hydrocracked middle distillate from coal extract or solution produced by the liquid solvent extraction or supercritical gas extraction processes and boiling in the range of approximately 180 to 280 °C. Composed primarily of hydrogenated two-ring carbon compounds and their alkyl derivatives having carbon numbers predominantly in the range of C ₉ through C ₁₄ .)	648-153-00-8	302-693-8	94114-57-5	J
Light oil (coal), semi-coking process; Fresh oil (The volatile organic liquid condensed from the gas evolved in the low temperature (less than 700 °C) destructive distillation of coal. Composed primarily of C ₆₋₁₀ hydrocarbons.)	648-156-00-4	292-635-7	90641-11-5	J
Extracts (petroleum), light naphthenic distillate solvent	649-001-00-3	265-102-1	64742-03-6	H
Extracts (petroleum), heavy paraffinic distillate solvent	649-002-00-9	265-103-7	64742-04-7	H
Extracts (petroleum), light paraffinic distillate solvent	649-003-00-4	265-104-2	6472-05-8	H

Substances	Index No	EC No	CAS No	Notes
Extracts (petroleum), heavy naphthenic distillate solvent	649-004-00-X	265-111-0	64742-11-6	H
Extracts (petroleum), light vacuum gas oil solvent	649-005-00-5	295-341-7	91995-78-7	H
Hydrocarbons C ₂₆₋₅₅ , arom.-rich	649-006-00-0	307-753-7	97722-04-8	H
Residues (petroleum), atm. tower; Heavy fuel oil (A complex residuum from the atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly greater than C ₂₀ and boiling above approximately 350 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-008-00-1	265-045-2	64741-45-3	
Gas oils (petroleum), heavy vacuum; Heavy fuel oil (A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and boiling in the range of approximately 350 to 600 °C. This stream is likely to contain 5 wt % more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-009-00-7	265-058-3	64741-57-7	
Distillates (petroleum), heavy catalytic cracked; Heavy fuel oil (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₅ and boiling in the range of approximately 260 to 500 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-010-00-2	265-063-0	64741-61-3	
Clarified oils (petroleum), catalytic cracked; Heavy fuel oil (A complex combination of hydrocarbons produced as the residual fraction from distillation of the products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly greater than C ₂₀ and boiling above approximately 350 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-011-00-8	265-064-6	64741-62-4	
Residues (petroleum), hydrocracked; Heavy fuel oil (A complex combination of hydrocarbons produced as the residual fraction from distillation of the products of a hydrocracking process. It consists of hydrocarbons having carbon numbers predominantly greater than C ₂₀ and boiling above approximately 350 °C.)	649-012-00-3	265-076-1	64741-75-9	
Residues (petroleum), thermal cracked; Heavy fuel oil (A complex combination of hydrocarbons produced as the residual fraction from distillation of the product from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly greater than C ₂₀ and boiling above approximately 350 °C. This stream is likely to contain 5 wt % or more of 4- to 6-membered condensed ring aromatic hydrocarbons.)	649-013-00-9	265-081-9	64741-80-6	

Substances	Index No	EC No	CAS No	Notes
<p>Distillates (petroleum), heavy thermal cracked; Heavy fuel oil</p> <p>(A complex combination of hydrocarbons from the distillation of the products from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₆ and boiling in the range of approximately 260 to 480 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)</p>	649-014-00-4	265-082-4	64741-81-7	
<p>Gas oils (petroleum), hydrotreated vacuum; Heavy fuel oil</p> <p>(A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₃ through C₅₀ and boiling in the range of approximately 230 to 600 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)</p>	649-015-00-X	265-162-9	64742-59-2	
<p>Residues (petroleum) hydrodesulphurised atmospheric tower; Heavy fuel oil</p> <p>(A complex combination of hydrocarbons obtained by treating an atmospheric tower residuum with hydrogen in the presence of a catalyst under conditions primarily to remove organic sulfur compounds. It consists of hydrocarbons having carbon numbers predominantly greater than C₂₀ and boiling above approximately 350 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)</p>	649-016-00-5	265-181-2	64742-78-5	
<p>Gas oils (petroleum), hydrodesulphurised heavy vacuum; Heavy fuel oil</p> <p>(A complex combination of hydrocarbons obtained from a catalytic hydrodesulphurisation process. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀ and boiling in the range of approximately 350 to 600 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)</p>	649-017-00-0	265-189-6	64742-86-5	
<p>Residues (petroleum), steam-cracked; Heavy fuel oil</p> <p>(A complex combination of hydrocarbons obtained as the residual fraction from the distillation of the products of a steam cracking process (including steam cracking to produce ethylene). It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly greater than C₁₄ and boiling above approximately 260 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)</p>	649-018-00-6	265-193-8	64742-90-1	
<p>Residues (petroleum), atmospheric; Heavy fuel oil</p> <p>(A complex residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly greater than C₁₁ and boiling above approximately 200 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)</p>	649-019-00-1	269-777-3	68333-22-2	

Substances	Index No	EC No	CAS No	Notes
Clarified oils (petroleum), hydrodesulphurised catalytic cracked; Heavy fuel oil (A complex combination of hydrocarbons obtained by treating catalytic cracked clarified oil with hydrogen to convert organic sulfur to hydrogen sulfide which is removed. It consists of hydrocarbons having carbon numbers predominantly greater than C ₂₀ and boiling above approximately 350 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-020-00-7	269-782-0	68333-26-6	
Distillates (petroleum), hydrodesulphurised intermediate catalytic cracked; Heavy fuel oil (A complex combination of hydrocarbons obtained by treating intermediate catalytic cracked distillates with hydrogen to convert organic sulfur to hydrogen sulfide which is removed. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₃₀ and boiling in the range of approximately 205 to 450 °C. It contains a relatively large proportion of tricyclic aromatic hydrocarbons.)	649-021-00-2	269-783-6	68333-27-7	
Distillates (petroleum), hydrodesulphurised heavy catalytic cracked; Heavy fuel oil (A complex combination of hydrocarbons obtained by treatment of heavy catalytic cracked distillates with hydrogen to convert organic sulfur to hydrogen sulfide which is removed. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₅ and boiling in the range of approximately 260 to 500 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-022-00-8	269-784-1	68333-28-8	
Fuel oil, residues-straight-run gas oils, high-sulfur; Heavy fuel oil	649-023-00-3	270-674-0	68476-32-4	
Fuel oil, residual; Heavy fuel oil (The liquid product from various refinery streams, usually residues. The composition is complex and varies with the source of the crude oil.)	649-024-00-9	270-675-6	68476-33-5	
Residues (petroleum), catalytic reformer fractionator residue distillation; Heavy fuel oil (A complex residuum from the distillation of catalytic reformer fractionator residue. It boils above approximately 399 °C.)	649-025-00-4	270-792-2	68478-13-7	
Residues (petroleum), heavy coker gas oil and vacuum gas oil; Heavy fuel oil (A complex combination of hydrocarbons produced as the residual fraction from the distillation of heavy coker gas oil and vacuum gas oil. It predominantly consists of hydrocarbons having carbon numbers predominantly greater than C ₁₃ and boiling above approximately 230 °C.)	649-026-00-X	270-796-4	68478-17-1	
Residues (petroleum), heavy coker and light vacuum; Heavy fuel oil (A complex combination of hydrocarbons produced as the residual fraction from the distillation of heavy coker gas oil and light vacuum gas oil. It consists predominantly of hydrocarbons having carbon numbers predominantly greater than C ₁₃ and boiling above approximately 230 °C.)	649-027-00-5	270-983-0	68512-61-8	

Substances	Index No	EC No	CAS No	Notes
Residues (petroleum), light vacuum; Heavy fuel oil (A complex residuum from the vacuum distillation of the residuum from the atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly greater than C ₁₃ and boiling above approximately 230 °C.)	649-028-00-0	270-984-6	68512-62-9	
Residues (petroleum), steam-cracked light; Heavy fuel oil (A complex residuum from the distillation of the products from a steam-cracking process. It consists predominantly of aromatic and unsaturated hydrocarbons having carbon numbers greater than C ₇ and boiling in the range of approximately 101 to 555 °C.)	649-029-00-6	271-013-9	68513-69-9	
Fuel oil, No 6; Heavy fuel oil (A distillate oil having a minimum viscosity of 197 10 ⁻⁶ m ² s ⁻¹ at 37,7 °C to a maximum of 197 10 ⁻⁵ m ² s ⁻¹ at 37,7 °C.)	649-030-00-1	271-384-7	68553-00-4	
Residues (petroleum), topping plant, low-sulfur; Heavy fuel oil (A low-sulfur complex combination of hydrocarbons produced as the residual fraction from the topping plant distillation of crude oil. It is the residuum after the straight-run gasoline cut, kerosene cut and gas oil cut have been removed.)	649-031-00-7	271-763-7	68607-30-7	
Gas oils (petroleum), heavy atmospheric; Heavy fuel oil (A complex combination of hydrocarbons obtained by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₇ through C ₃₅ and boiling in the range of approximately 121 to 510 °C.)	649-032-00-2	272-184-2	68783-08-4	
Residues (petroleum), coker scrubber, Condensed-ring-arom.-contg.; Heavy fuel oil (A very complex combination of hydrocarbons produced as the residual fraction from the distillation of vacuum residuum and the products from a thermal cracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly greater than C ₂₀ and boiling above approximately 350 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-033-00-8	272-187-9	68783-13-1	
Distillates (petroleum), petroleum residues vacuum; Heavy fuel oil (A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from the atmospheric distillation of crude oil.)	649-034-00-3	273-263-4	68955-27-1	
Residues (petroleum), steam-cracked, resinous; Heavy fuel oil (A complex residuum from the distillation of steam-cracked petroleum residues.)	649-035-00-9	273-272-3	68955-36-2	
Distillates (petroleum), intermediate vacuum; Heavy fuel oil (A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₄ through C ₄₂ and boiling in the range of approximately 250 to 545 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-036-00-4	274-683-0	70592-76-6	

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), light vacuum; Heavy fuel oil (A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₃₅ and boiling in the range of approximately 250 to 545 °C.)	649-037-00-X	247-684-6	70592-77-7	
Distillates (petroleum), vacuum; Heavy fuel oil (A complex combination of hydrocarbons produced by the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists of hydrocarbons having numbers predominantly in the range of C ₁₅ through C ₅₀ and boiling in the range of approximately 270 to 600 °C. This stream is likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-038-00-5	274-685-1	70592-78-8	
Gas oils (petroleum), hydrodesulphurised coker heavy vacuum; Heavy fuel oil (A complex combination of hydrocarbons obtained by hydrodesulphurisation of heavy coker distillate stocks. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range C ₁₈ to C ₄₄ and boiling in the range of approximately 304 to 548 °C. Likely to contain 5 wt % or more of four- to six-membered condensed ring aromatic hydrocarbons.)	649-039-00-0	285-555-9	85117-03-9	
Residues (petroleum), steam-cracked, distillates; Heavy fuel oil (A complex combination of hydrocarbons obtained during the production of refined petroleum tar by the distillation of steam cracked tar. It consists predominantly of aromatic and other hydrocarbons and organic sulfur compounds.)	649-040-00-6	292-657-7	90669-75-3	
Residues (petroleum), vacuum, light; Heavy fuel oil (A complex residuum from the vacuum distillation of the residuum from atmospheric distillation of crude oil. It consists predominantly of hydrocarbons having carbon numbers predominantly greater than C ₂₄ and boiling above approximately 390 °C.)	649-041-00-1	292-658-2	90669-76-4	
Fuel oil, heavy, high-sulphur; Heavy fuel oil (A complex combination of hydrocarbons obtained by the distillation of crude petroleum. It consists predominantly of aliphatic, aromatic and cycloaliphatic hydrocarbons having carbon numbers predominantly higher than C ₂₅ and boiling above approximately 400 °C.)	649-042-00-7	295-396-7	92045-14-2	
Residues (petroleum), catalytic cracking; Heavy fuel oil (A complex combination of hydrocarbons produced as the residual fraction from the distillation of the products from a catalytic cracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly greater than C ₁₁ and boiling above approximately 200 °C.)	649-043-00-2	295-511-0	92061-97-7	
Distillates (petroleum), intermediate catalytic cracked, thermally degraded; Heavy fuel oil (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process which has been used as a heat transfer fluid. It consists predominantly of hydrocarbons boiling in the range of approximately 220 to 450 °C. This stream is likely to contain organic sulfur compounds.)	649-044-00-8	295-990-6	92201-59-7	

Substances	Index No	EC No	CAS No	Notes
Residual oils (petroleum); Heavy fuel oil (A complex combination of hydrocarbons, sulfur compounds and metal-containing organic compounds obtained as the residue from refinery fractionation cracking processes. It produces a finished oil with a viscosity above $2 \cdot 10^{-6} \text{ m}^2 \cdot \text{s}^{-1}$ at 100 °C.)	649-045-00-3	298-754-0	93821-66-0	
Residues, steam cracked, thermally treated; Heavy fuel oil (A complex combination of hydrocarbons obtained by the treatment and distillation of raw steam-cracked naphtha. It consists predominantly of unsaturated hydrocarbons boiling in the range above approximately 180 °C.)	649-046-00-9	308-733-0	98219-64-8	
Distillates (petroleum), hydrodesulphurised full-range middle; Heavy fuel oil (A complex combination of hydrocarbons obtained by treating a petroleum stock with hydrogen. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C_9 through C_{25} and boiling in the range of approximately 150 to 400 °C.)	649-047-00-4	309-863-0	101316-57-8	
Residues (petroleum), catalytic reformer fractionator; Heavy fuel oil (A complex combination of hydrocarbons produced as the residual fraction from distillation of the product from a catalytic reforming process. It consists of predominantly aromatic hydrocarbons having carbon numbers predominantly in the range of C_{10} through C_{25} and boiling in the range of approximately 160 to 400 °C. This stream is likely to contain 5 wt % or more of four- or six-membered condensed ring aromatic hydrocarbons.)	649-048-00-X	265-069-3	64741-67-9	
Petroleum; Crude oil (A complex combination of hydrocarbons. It consists predominantly of aliphatic, alicyclic and aromatic hydrocarbons. It may also contain small amounts of nitrogen, oxygen and sulfur compounds. This category encompasses light, medium, and heavy petroleums, as well as the oils extended from tar sands. Hydrocarbonaceous materials requiring major chemical changes for their recovery or conversion to petroleum refinery feedstocks such as crude shale oils; upgraded shale oils and liquid coal fuels are not included in this definition.)	649-049-00-5	232-298-5	8002-05-9	
Gases (petroleum), catalytic cracked naphtha depropaniser overhead, C_3 -rich acid-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked hydrocarbons and treated to remove acidic impurities. It consists of hydrocarbons having carbon numbers in the range of C_2 through C_4 , predominantly C_3 .)	649-062-00-6	270-755-0	68477-73-6	K
Gases (petroleum), catalytic cracker; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of the products from a catalytic cracking process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C_1 through C_6 .)	649-063-00-1	270-756-6	68477-74-7	K
Gases (petroleum), catalytic cracker, C_{1-5} -rich; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of aliphatic hydrocarbons having carbon numbers in the range of C_1 through C_6 , predominantly C_1 through C_5 .)	649-064-00-7	270-757-1	68477-75-8	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), catalytic polymd. naphtha stabiliser overhead, C ₂₋₄ -rich; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of catalytic polymerised naphtha. It consists of aliphatic hydrocarbons having carbon numbers in the range of C ₂ through C ₆ , predominantly C ₂ through C ₄ .)	649-065-00-2	270-758-7	68477-76-9	K
Gases (petroleum), catalytic reformer, C ₁₋₄ -rich; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers in the range of C ₁ through C ₆ , predominantly C ₁ through C ₄ .)	649-066-00-8	270-760-8	68477-79-2	K
Gases (petroleum), C _{3,5} olefinic-paraffinic alkylation feed; Petroleum gas (A complex combination of olefinic and paraffinic hydrocarbons having carbon numbers in the range of C ₃ through C ₅ which are used as alkylation feed. Ambient temperatures normally exceed the critical temperature of these combinations.)	649-067-00-3	270-765-5	68477-83-8	K
Gases (petroleum), C ₄ -rich; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from a catalytic fractionation process. It consists of aliphatic hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₄ .)	649-068-00-9	270-767-6	68477-85-0	K
Gases (petroleum), deethaniser overheads; Petroleum gas (A complex combination of hydrocarbons produced from distillation of the gas and gasoline fractions from the catalytic cracking process. It contains predominantly ethane and ethylene.)	649-069-00-4	270-768-1	68477-86-1	K
Gases (petroleum), deisobutaniser tower overheads; Petroleum gas (A complex combination of hydrocarbons produced by the atmospheric distillation of a butane-butylene stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-070-00-X	270-769-7	68477-87-2	K
Gases (petroleum), depropaniser dry, propene-rich; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from the gas and gasoline fractions of a catalytic cracking process. It consists predominantly of propylene with some ethane and propane.)	649-071-00-5	270-772-3	68477-90-7	K
Gases (petroleum), depropaniser overheads; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from the gas and gasoline fractions of a catalytic cracking process. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-072-00-0	270-773-9	68477-91-8	K
Gases (petroleum), gas recovery plant depropaniser overheads; Petroleum gas (A complex combination of hydrocarbons obtained by fractionation of miscellaneous hydrocarbon streams. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₄ , predominantly propane.)	649-073-00-6	270-777-0	68477-94-1	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), Girbatol unit feed; Petroleum gas (A complex combination of hydrocarbons that is used as the feed into the Girbatol unit to remove hydrogen sulfide. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-074-00-1	270-778-6	68477-95-2	K
Gases (petroleum), isomerised naphtha fractionator, C ₄ -rich, hydrogen sulfide-free; Petroleum gas	649-075-00-7	270-782-8	68477-99-6	K
Tail gas (petroleum), catalytic cracked clarified oil and thermal cracked vacuum residue fractionation reflux drum; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked clarified oil and thermal cracked vacuum residue. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-076-00-2	270-802-5	68478-21-7	K
Tail gas (petroleum), catalytic cracked naphtha stabilisation absorber; Petroleum gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-077-00-8	270-803-0	68478-22-8	K
Tail gas (petroleum), catalytic cracker, catalytic reformer and hydrodesulphuriser combined fractionator; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of products from catalytic cracking, catalytic reforming and hydrodesulphurising processes treated to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-078-00-3	270-804-6	68478-24-0	K
Tail gas (petroleum), catalytic reformed naphtha fractionation stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of catalytic reformed naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-079-00-9	270-806-7	68478-26-2	K
Tail gas (petroleum), saturate gas plant mixed stream, C ₄ -rich; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of straight-run naphtha, distillation tail gas and catalytic reformed naphtha stabiliser tail gas. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₆ , predominantly butane and isobutane.)	649-080-00-4	270-813-5	68478-32-0	K
Tail gas (petroleum), saturate gas recovery plant, C _{1,2} -rich; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of distillate tail gas, straight-run naphtha, catalytic reformed naphtha stabiliser tail gas. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₅ , predominantly methane and ethane.)	649-081-00-X	270-814-0	68478-33-1	K
Tail gas (petroleum), vacuum residues thermal cracker; Petroleum gas (A complex combination of hydrocarbons obtained from the thermal cracking of vacuum residues. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-082-00-5	270-815-6	68478-34-2	K

Substances	Index No	EC No	CAS No	Notes
Hydrocarbons, C _{3,4} -rich, petroleum distillate; Petroleum gas (A complex combination of hydrocarbons produced by distillation and condensation of crude oil. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₃ through C ₄ .)	649-083-00-0	270-990-9	68512-91-4	K
Gases (petroleum), full-range straight-run naphtha dehexaniser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of the full-range straight-run naphtha. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-084-00-6	271-000-8	68513-15-5	K
Gases (petroleum), hydrocracking depropaniser off, hydrocarbon-rich; Petroleum gas (A complex combination of hydrocarbon produced by the distillation of products from a hydrocracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ . It may also contain small amounts of hydrogen and hydrogen sulfide.)	649-085-00-1	271-001-3	68513-16-6	K
Gases (petroleum), light straight-run naphtha stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained by the stabilisation of light straight-run naphtha. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-086-00-7	271-002-9	68513-17-7	K
Residues (petroleum), alkylation splitter, C ₄ -rich; Petroleum gas (A complex residuum from the distillation of streams from various refinery operations. It consists of hydrocarbons having carbon numbers in the range of C ₄ through C ₅ , predominantly butane, and boiling in the range of approximately - 11,7 to 27,8 °C.)	649-087-00-2	271-010-2	68513-66-6	K
Hydrocarbons, C _{1,4} , sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting hydrocarbon gases to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ and boiling in the range of approximately - 164 to - 0,5 °C.)	649-089-00-3	271-038-5	68514-36-3	K
Hydrocarbons, C _{1,3} ; Petroleum gas (A complex combination of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ and boiling in the range of approximately - 164 to - 42 °C.)	649-090-00-9	271-259-7	68527-16-2	K
Hydrocarbons, C _{1,4} , debutaniser fraction; Petroleum gas	649-091-00-4	271-261-8	68527-19-5	K
Gases (petroleum), C _{1,5} , wet; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of crude oil and/or the cracking of tower gas oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-092-00-X	271-624-0	68602-83-5	K
Hydrocarbons, C _{2,4} ; Petroleum gas	649-093-00-5	271-734-9	68606-25-7	K
Hydrocarbons, C ₃ ; Petroleum gas	649-094-00-0	271-735-4	68606-26-8	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), alkylation feed; Petroleum gas (A complex combination of hydrocarbons produced by the catalytic cracking of gas oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-095-00-6	271-737-5	68606-27-9	K
Gases (petroleum), depropaniser bottoms fractionation off; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of depropaniser bottoms. It consists predominantly of butane, isobutane and butadiene.)	649-096-00-1	271-742-2	68606-34-8	K
Gases (petroleum), refinery blend; Petroleum gas (A complex combination obtained from various processes. It consists of hydrogen, hydrogen sulfide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-097-00-7	272-183-7	68783-07-3	K
Gases (petroleum), catalytic cracking; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of the products from a catalytic cracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ .)	649-098-00-2	272-203-4	68783-64-2	K
Gases (petroleum), C _{2,4} , sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting a petroleum distillate to a sweetening process to convert mercaptans or to remove acidic impurities. It consists predominantly of saturated and unsaturated hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ and boiling in the range of approximately - 51 to - 34 °C.)	649-099-00-8	272-205-5	68783-65-3	K
Gases (petroleum), crude oil fractionation off; Petroleum gas (A complex combination of hydrocarbons produced by the fractionation of crude oil. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-100-00-1	272-871-7	68918-99-0	K
Gases (petroleum), dehexaniser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of combined naphtha streams. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-101-00-7	272-872-2	68919-00-6	K
Gases (petroleum), light straight run gasoline fractionation stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of light straight-run gasoline. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-102-00-2	272-878-5	68919-05-1	K
Gases (petroleum), naphtha unfiner desulphurisation stripper off; Petroleum gas (A complex combination of hydrocarbons produced by a naphtha unfiner desulphurisation process and stripped from the naphtha product. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-103-00-8	272-879-0	68919-06-2	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), straight-run naphtha catalytic reforming off; Petroleum gas (A complex combination of hydrocarbons obtained by the catalytic reforming of straight-run naphtha and fractionation of the total effluent. It consists of methane, ethane, and propane.)	649-104-00-3	272-882-7	68919-09-5	K
Gases (petroleum), fluidised catalytic cracker splitter overheads; Petroleum gas (A complex combination of hydrocarbons produced by the fractionation of the charge to the C ₃ -C ₄ splitter. It consists predominantly of C ₃ hydrocarbons.)	649-105-00-9	272-893-7	68919-20-0	K
Gases (petroleum), straight-run stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of the liquid from the first tower used in the distillation of crude oil. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-106-00-4	272-883-2	68919-10-8	K
Gases (petroleum), catalytic cracked naphtha debutaniser; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked naphtha. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-107-00-X	273-169-3	68952-76-1	K
Tail gas (petroleum), catalytic cracked distillate and naphtha stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of catalytic cracked naphtha and distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-108-00-5	273-170-9	68952-77-2	K
Tail gas (petroleum), thermal-cracked distillate, gas oil and naphtha absorber; Petroleum gas (A complex combination of hydrocarbons obtained from the separation of thermal-cracked distillates, naphtha and gas oil. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-109-00-0	273-175-6	68952-81-8	K
Tail gas (petroleum), thermal cracked hydrocarbon fractionation stabiliser, petroleum coking; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of thermal cracked hydrocarbons from a petroleum coking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-110-00-6	273-176-1	68952-82-9	K
Gases (petroleum, light steam-cracked, butadiene conc.; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a thermal cracking process. It consists of hydrocarbons having a carbon number predominantly of C ₄ .)	649-111-00-1	273-265-5	68955-28-2	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), straight-run naphtha catalytic reformer stabiliser overhead; Petroleum gas (A complex combination of hydrocarbons obtained by the catalytic reforming of straight-run naphtha and the fractionation of the total effluent. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-112-00-7	273-270-2	68955-34-0	K
Hydrocarbons, C ₄ ; Petroleum gas	649-113-00-2	289-339-5	87741-01-3	K
Alkanes, C ₁₋₄ , C ₃ -rich; Petroleum gas	649-114-00-8	292-456-4	90622-55-2	K
Gases (petroleum), steam-cracker C ₃ -rich; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a steam cracking process. It consists predominantly of propylene with some propane and boils in the range of approximately - 70 to 0 °C.)	649-115-00-3	295-404-9	92045-22-2	K
Hydrocarbons, C ₄ , steam-cracker distillate; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of the products of a steam cracking process. It consists predominantly of hydrocarbons having a carbon number of C ₄ , predominantly 1-butene and 2-butene, containing also butane and isobutene and boiling in the range of approximately - 12 to 5 °C.)	649-116-00-9	295-405-4	92045-23-3	K
Petroleum gases, liquefied, sweetened, C ₄ fraction; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting a liquified petroleum gas mix to a sweetening process to oxidise mercaptans or to remove acidic impurities. It consists predominantly of C ₄ saturated and unsaturated hydrocarbons.)	649-117-00-4	295-463-0	92045-80-2	K
Hydrocarbons, C ₄ , 1,3-butadiene-and isobutene-free; Petroleum gas	649-118-00-X	306-004-1	95465-89-7	K
Raffinates (petroleum), steam-cracked C ₄ fraction cuprous ammonium acetate extraction, C _{3,5} and C _{3,5} unsaturated., butadiene-free; Petroleum gas	649- 119 -00-5	307-769-4	97722-19-5	K
Gases (petroleum), amine system feed; Refinery gas (The feed gas to the amine system for removal of hydrogen sulphide. It consists primarily of hydrogen. Carbon monoxide, carbon dioxide, hydrogen sulfide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ , may also be present.)	649-120-00-0	270-746-1	68477-65-6	K
Gases (petroleum), benzene unit hydrodesulphuriser off; Refinery gas (Off gases produced by the benzene unit. It consists primarily of hydrogen. Carbon monoxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ , including benzene, may also be present.)	649-121-00-6	270-747-7	68477-66-7	K
Gases (petroleum), benzene unit recycle, hydrogen-rich; Refinery gas (A complex combination of hydrocarbons obtained by recycling the gases of the benzene unit. It consists primarily of hydrogen with various small amounts of carbon monoxide and hydrocarbons having carbon numbers in the range of C ₁ through C ₆ .)	649-122-00-1	270-748-2	68477-67-8	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), blend oil, hydrogen-nitrogen-rich; Refinery gas (A complex combination of hydrocarbons obtained by distillation of a blend oil. It consists primarily of hydrogen and nitrogen with various small amounts of carbon monoxide, carbon dioxide, and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-123-00-7	270-749-8	68477-68-9	K
Gases (petroleum), catalytic reformed naphtha stripper overheads; Refinery gas (A complex combination of hydrocarbons obtained from stabilisation of catalytic reformed naphtha. It consists of hydrogen and saturated hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-124-00-2	270-759-2	68477-77-0	K
Gases (petroleum), C ₆₋₈ catalytic reformer recycle; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from catalytic reforming of C ₆ -C ₈ feed and recycled to conserve hydrogen. It consists primarily of hydrogen. It may also contain various small amounts of carbon monoxide, carbon dioxide, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-125-00-8	270-761-3	68477-80-5	K
Gases (petroleum), C ₆₋₈ catalytic reformer; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from catalytic reforming of C ₆ -C ₈ feed. It consists of hydrocarbons having carbon numbers in the range of C ₁ through C ₅ and hydrogen.)	649-126-00-3	270-762-9	68477-81-6	K
Gases (petroleum), C ₆₋₈ catalytic reformer recycle, hydrogen-rich; Refinery gas	649-127-00-9	270-763-4	68477-82-7	K
Gases (petroleum), C ₂ -return stream; Refinery gas (A complex combination of hydrocarbons obtained by the extraction of hydrogen from a gas stream which consists primarily of hydrogen with small amounts of nitrogen, carbon monoxide, methane, ethane, and ethylene. It contains predominantly hydrocarbons such as methane, ethane, and ethylene with small amounts of hydrogen, nitrogen and carbon monoxide.)	649-128-00-4	270-766-0	68477-84-9	K
Gases (petroleum), dry sour, gas-concentration-unit-off; Refinery gas (The complex combination of dry gases from a gas concentration unit. It consists of hydrogen, hydrogen sulphide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-129-00-X	270-774-4	68477-92-9	K
Gases (petroleum), gas concentration reabsorber distillation; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from combined gas streams in a gas concentration reabsorber. It consists predominantly of hydrogen, carbon monoxide, carbon dioxide, nitrogen, hydrogen sulphide and hydrocarbons having carbon numbers in the range of C ₁ through C ₃ .)	649-130-00-5	270-776-5	68477-93-0	K
Gases (petroleum), hydrogen absorber off; Refinery gas (A complex combination obtained by absorbing hydrogen from a hydrogen rich stream. It consists of hydrogen, carbon monoxide, nitrogen, and methane with small amounts of C ₂ hydrocarbons.)	649-131-00-0	270-779-1	68477-96-3	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), hydrogen-rich; Refinery gas (A complex combination separated as a gas from hydrocarbon gases by chilling. It consists primarily of hydrogen with various small amounts of carbon monoxide, nitrogen, methane, and C ₂ hydrocarbons.)	649-132-00-6	270-780-7	68477-97-4	K
Gases (petroleum), hydrotreater blend oil recycle, hydrogen-nitrogen-rich; Refinery gas (A complex combination obtained from recycled hydrotreated blend oil. It consists primarily of hydrogen and nitrogen with various small amounts of carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-133-00-1	270-781-2	68477-98-5	K
Gases (petroleum), recycle, hydrogen-rich; Refinery gas (A complex combination obtained from recycled reactor gases. It consists primarily of hydrogen with various small amounts of carbon monoxide, carbon dioxide, nitrogen, hydrogen sulphide, and saturated aliphatic hydrocarbons having carbon numbers in the range of C ₁ through C ₅ .)	649-134-00-7	270-783-3	68478-00-2	K
Gases (petroleum), reformer make-up, hydrogen-rich; Refinery gas (A complex combination obtained from the reformers. It consists primarily of hydrogen with various small amounts of carbon monoxide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-135-00-2	270-784-9	68478-01-3	K
Gases (petroleum), reforming hydrotreater; Refinery gas (A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen, methane, and ethane with various small amounts of hydrogen sulphide and aliphatic hydrocarbons having carbon numbers predominantly in the range C ₃ through C ₅ .)	649-136-00-8	270-785-4	68478-02-4	K
Gases (petroleum), reforming hydrotreater, hydrogen-methane-rich; Refinery gas (A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen and methane with various small amounts of carbon monoxide, carbon dioxide, nitrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₅ .)	649-137-00-3	270-787-5	68478-03-5	K
Gases (petroleum), reforming hydrotreater make-up, hydrogen-rich; Refinery gas (A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen with various small amounts of carbon monoxide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-138-00-9	270-788-0	68478-04-6	K
Gases (petroleum), thermal cracking distillation; Refinery gas (A complex combination produced by distillation of products from a thermal cracking process. It consists of hydrogen, hydrogen sulphide, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-139-00-4	270-789-6	68478-05-7	K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), catalytic cracker refractionation absorber; Refinery gas (A complex combination of hydrocarbons obtained from refractionation of products from a catalytic cracking process. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-140-00-X	270-805-1	68478-25-1	K
Tail gas (petroleum), catalytic reformed naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from the catalytic reforming of straight-run naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-141-00-5	270-807-2	68478-27-3	K
Tail gas (petroleum), catalytic reformed naphtha stabiliser; Refinery gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic reformed naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-142-00-0	270-808-8	68478-28-4	K
Tail gas (petroleum), cracked distillate hydrotreater separator; Refinery gas (A complex combination of hydrocarbons obtained by treating cracked distillates with hydrogen in the presence of a catalyst. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-143-00-6	270-809-3	68478-29-5	K
Tail gas (petroleum), hydrodesulphurised straight-run naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from hydrodesulphurisation of straight-run naphtha. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-144-00-1	270-810-9	68478-30-8	K
Gases (petroleum), catalytic reformed straight-run naphtha stabiliser overheads; Refinery gas (A complex combination of hydrocarbons obtained from the catalytic reforming of straight-run naphtha followed by fractionation of the total effluent. It consists of hydrogen, methane, ethane and propane.)	649-145-00-7	270-999-8	68513-14-4	K
Gases (petroleum), reformer effluent high-pressure flash drum off; Refinery gas (A complex combination produced by the high-pressure flashing of the effluent from the reforming reactor. It consists primarily of hydrogen with various small amounts of methane, ethane, and propane.)	649-146-00-2	271-003-4	68513-18-8	K
Gases (petroleum), reformer effluent low-pressure flash drum off; Refinery gas (A complex combination produced by low-pressure flashing of the effluent from the reforming reactor. It consists primarily of hydrogen with various small amounts of methane, ethane, and propane.)	649-147-00-8	271-005-5	68513-19-9	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), oil refinery gas distillation off; Refinery gas (A complex combination separated by distillation of a gas stream containing hydrogen, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers in the range of C ₁ through C ₆ or obtained by cracking ethane and propane. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₂ , hydrogen, nitrogen, and carbon monoxide.)	649-148-00-3	271-258-1	68527-15-1	K
Gases (petroleum), benzene unit hydrotreater depentaniser overheads; Refinery gas (A complex combination produced by treating the feed from the benzene unit with hydrogen in the presence of a catalyst followed by depentanising. It consists primarily of hydrogen, ethane and propane with various small amounts of nitrogen, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ . It may contain trace amounts of benzene.)	649-149-00-9	271-623-5	68602-82-4	K
Gases (petroleum), secondary absorber off, fluidised catalytic cracker overheads fractionator; Refinery gas (A complex combination produced by the fractionation of the overhead products from the catalytic cracking process in the fluidised catalytic cracker. It consists of hydrogen, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-150-00-4	271-625-6	68602-84-6	K
Petroleum products, refinery gases; Refinery gas (A complex combination which consists primarily of hydrogen with various small amounts of methane, ethane and propane.)	649-151-00-X	271-750-6	68607-11-4	K
Gases (petroleum), hydrocracking low-pressure separator; Refinery gas (A complex combination obtained by the liquid-vapour separation of the hydrocracking process reactor effluent. It consists predominantly of hydrogen and saturated hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-152-00-5	272-182-1	68783-06-2	K
Gases (petroleum), refinery; Refinery gas (A complex combination obtained from various petroleum refining operations. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-153-00-0	272-338-9	68814-67-5	K
Gases (petroleum), platformer products separator off; Refinery gas (A complex combination obtained from the chemical reforming of naphthenes to aromatics. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-154-00-6	272-343-6	68814-90-4	K
Gases (petroleum), hydrotreated sour kerosine depentaniser stabiliser off; Refinery gas (The complex combination obtained from the depentaniser stabilisation of hydrotreated kerosine. It consists primarily of hydrogen, methane, ethane, and propane with various small amounts of nitrogen, hydrogen sulphide, carbon monoxide and hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₅ .)	649-155-00-1	272-775-5	68911-58-0	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), hydrotreated sour kerosine flash drum; Refinery gas (A complex combination obtained from the flash drum of the unit treating sour kerosine with hydrogen in the presence of a catalyst. It consists primarily of hydrogen and methane with various small amounts of nitrogen, carbon monoxide, and hydro-carbons having carbon numbers predominantly in the range of C ₂ through C ₅ .)	649-156-00-7	272-776-0	68911-59-1	K
Gases (petroleum), distillate unifiner desulphurisation stripper off; Refinery gas (A complex combination stripped from the liquid product of the unifiner desulphurisation process. It consists of hydrogen sulphide, methane, ethane, and propane.)	649-157-00-2	272-873-8	68919-01-7	K
Gases (petroleum), fluidised catalytic cracker fractionation off; Refinery gas (A complex combination produced by the fractionation of the overhead product of the fluidised catalytic cracking process. It consists of hydrogen, hydrogen sulphide, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-158-00-8	272-874-3	68919-02-8	K
Gases (petroleum), fluidised catalytic cracker scrubbing secondary absorber off; Refinery gas (A complex combination produced by scrubbing the overhead gas from the fluidised catalytic cracker. It consists of hydrogen, nitrogen, methane, ethane and propane.)	649-159-00-3	272-875-9	68919-03-9	K
Gases (petroleum), heavy distillate hydrotreater desulphurisation stripper off; Refinery gas (A complex combination stripped from the liquid product of the heavy distillate hydrotreater desulphurisation process. It consists of hydrogen, hydrogen sulphide, and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-160-00-9	272-876-4	68919-04-0	K
Gases (petroleum), platformer stabiliser off, light ends fractionation; Refinery gas (A complex combination obtained by the fractionation of the light ends of the platinum reactors of the platformer unit. It consists of hydrogen, methane, ethane and propane.)	649-161-00-4	272-880-6	68919-07-3	K
Gases (petroleum), preflash tower off, crude distillation; Refinery gas (A complex combination produced from the first tower used in the distillation of crude oil. It consists of nitrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-162-00-X	272-881-1	68919-08-4	K
Gases (petroleum), tar stripper off; Refinery gas (A complex combination obtained by the fractionation of reduced crude oil. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-163-00-5	272-884-8	68919-11-9	K
Gases (petroleum), unifiner stripper off; Refinery gas (A combination of hydrogen and methane obtained by fractionation of the products from the unifiner unit.)	649-164-00-0	272-885-3	68919-12-0	K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), catalytic hydrodesulphurised naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from the hydrodesulphurisation of naphtha. It consists of hydrogen, methane, ethane, and propane.)	649-165-00-6	273-173-5	68952-79-4	K
Tail gas (petroleum), straight-run naphtha hydrodesulphuriser; Refinery gas (A complex combination obtained from the hydrodesulphurisation of straight-run naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-166-00-1	273-174-0	68952-80-7	K
Gases (petroleum), sponge absorber off, fluidised catalytic cracker and gas oil desulphuriser overhead fractionation; Refinery gas (A complex combination obtained by the fractionation of products from the fluidised catalytic cracker and gas oil desulphuriser. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-167-00-7	273-269-7	68955-33-9	K
Gases (petroleum), crude distillation and catalytic cracking; Refinery gas (A complex combination produced by crude distillation and catalytic cracking processes. It consists of hydrogen, hydrogen sulphide, nitrogen, carbon monoxide and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-168-00-2	273-563-5	68989-88-8	K
Gases (petroleum), gas oil diethanolamine scrubber off; Refinery gas (A complex combination produced by desulphurisation of gas oils with diethanolamine. It consists predominantly of hydrogen sulphide, hydrogen and aliphatic hydrocarbons having carbon numbers in the range of C ₁ through C ₅ .)	649-169-00-8	295-397-2	92045-15-3	K
Gases (petroleum), gas oil hydrodesulphurisation effluent; Refinery gas (A complex combination obtained by separation of the liquid phase from the effluent from the hydrogenation reaction. It consists predominantly of hydrogen, hydrogen sulphide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-170-00-3	295-398-8	92045-16-4	K
Gases (petroleum), gas oil hydrodesulphurisation purge; Refinery gas (A complex combination of gases obtained from the reformer and from the purges from the hydrogenation reactor. It consists predominantly of hydrogen and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-171-00-9	295-399-3	92045-17-5	K
Gases (petroleum), hydrogenator effluent flash drum off; Refinery gas (A complex combination of gases obtained from flash of the effluents after the hydrogenation reaction. It consists predominantly of hydrogen and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-172-00-4	295-400-7	92045-18-6	K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), naphtha steam cracking high-pressure residual; Refinery gas (A complex combination obtained as a mixture of the non-condensable portions from the product of a naphtha steam cracking process as well as residual gases obtained during the preparation of subsequent products. It consists predominantly of hydrogen and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ with which natural gas may also be mixed.)	649-173-00-X	295-401-2	92045-19-7	K
Gases (petroleum), residue visbaking off; Refinery gas (A complex combination obtained from viscosity reduction of residues in a furnace. It consists predominantly of hydrogen sulphide and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-174-00-5	295-402-8	92045-20-0	K
Foots oil (petroleum), acid-treated; Foots oil (A complex combination of hydrocarbons obtained by treatment of Foot's oil with sulphuric acid. It consists predominantly of branched-chain hydrocarbons with carbon numbers predominantly in the range of C ₂₀ through C ₅₀ .)	649-175-00-0	300-225-7	93924-31-3	L
Foots oil (petroleum), clay-treated; Foots oil (A complex combination of hydrocarbons obtained by treatment of Foot's oil with natural or modified clay in either a contacting or percolation process to remove the trace amounts of polar compounds and impurities present. It consists predominantly of branched chain hydrocarbons with carbon numbers predominantly in the range of C ₂₀ through C ₅₀ .)	649-176-00-6	300-226-2	93924-32-4	L
Gases (petroleum), C _{3,4} ; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from the cracking of crude oil. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₄ , predominantly of propane and propylene, and boiling in the range of approximately - 51 to - 1 °C.)	649-177-00-1	268-629-5	68131-75-9	K
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber; Petroleum gas (The complex combination of hydrocarbons from the distillation of the products from catalytic cracked distillates and catalytic cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₄ .)	649-178-00-7	269-617-2	68307-98-2	K
Tail gas (petroleum), catalytic polymerisation naphtha fractionation stabiliser; Petroleum gas (A complex combination of hydrocarbons from the fractionation stabilisation products from polymerisation of naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₄ .)	649-179-00-2	269-618-8	68307-99-3	K
Tail gas (petroleum), catalytic reformed naphtha fractionation stabiliser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation stabilisation of catalytic reformed naphtha and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-180-00-8	269-619-3	68308-00-9	K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), cracked distillate hydrotreater stripper; Petroleum gas (A complex combination of hydrocarbons obtained by treating thermal cracked distillates with hydrogen in the presence of a catalyst. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-181-00-3	269-620-9	68308-01-0	K
Tail gas (petroleum), straight-run distillate hydrodesulphuriser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from catalytic hydrodesulphurisation of straight run distillates and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-182-00-9	269-630-3	68308-10-1	K
Tail gas (petroleum), gas oil catalytic cracking absorber; Petroleum gas (A complex combination of hydrocarbons obtained from the distillation of products from the catalytic cracking of gas oil. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-183-00-4	269-623-5	68308-03-2	K
Tail gas (petroleum), gas recovery plant; Petroleum gas (A complex combination of hydrocarbons from the distillation of products from miscellaneous hydrocarbon streams. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-184-00-X	269-624-0	68308-04-3	K
Tail gas (petroleum), gas recovery plant deethaniser; Petroleum gas (A complex combination of hydrocarbons from the distillation of products from miscellaneous hydrocarbon streams. It consists of hydrocarbon having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-185-00-5	269-625-6	68308-05-4	K
Tail gas (petroleum), hydrodesulphurised distillate and hydrodesulphurised naphtha fractionator, acid-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of hydrodesulphurised naphtha and distillate hydrocarbon streams and treated to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-186-00-0	269-626-1	68308-06-5	K
Tail gas (petroleum), hydrodesulphurised vacuum gas oil stripper, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from stripping stabilisation of catalytic hydrodesulphurised vacuum gas oil and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-187-00-6	269-627-7	68308-07-6	K
Tail gas (petroleum), light straight-run naphtha stabiliser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation stabilisation of light straight-run naphtha and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-188-00-1	269-629-8	68308-09-8	K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), propane-propylene alkylation feed prep deethaniser; Petroleum gas (A complex combination of hydrocarbons obtained from the distillation of the reaction products of propane with propylene. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-189-00-7	269-631-9	68308-11-2	K
Tail gas (petroleum), vacuum gas oil hydrodesulphuriser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from catalytic hydrodesulphurisation of vacuum gas oil and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-190-00-2	269-632-4	68308-12-3	K
Gases (petroleum), catalytic cracked overheads; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from the catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ and boiling in the range of approximately - 48 °C to 32 °C.)	649-191-00-8	270-071-2	68409-99-4	K
Alkanes, C _{1,2} ; Petroleum gas	649-193-00-9	270-651-5	68475-57-0	K
Alkanes, C _{2,3} ; Petroleum gas	649-194-00-4	270-652-0	68475-58-1	K
Alkanes, C _{3,4} ; Petroleum gas	649-195-00-X	270-653-6	68475-59-2	K
Alkanes, C _{4,5} ; Petroleum gas	649-196-00-5	270-654-1	68475-60-5	K
Fuel gases; Petroleum gas (A combination of light gases. It consists predominantly of hydrogen and/or low molecular weight hydrocarbons.)	649-197-00-0	270-667-2	68476-26-6	K
Fuel gases, crude oil of distillates; Petroleum gas (A complex combination of light gases produced by distillation of crude oil and by catalytic reforming of naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ and boiling in the range of approximately - 217 °C to - 12 °C.)	649-198-00-6	270-670-9	68476-29-9	K
Hydrocarbons, C _{3,4} ; Petroleum gas	649-199-00-1	270-681-9	68476-40-4	K
Hydrocarbons, C _{4,5} ; Petroleum gas	649-200-00-5	270-682-4	68476-42-6	K
Hydrocarbons, C _{2,4} , C ₃ -rich; Petroleum gas	649-201-00-0	270-689-2	68476-49-3	K
Petroleum gases, liquefied; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₇ and boiling in the range of approximately - 40 °C to 80 °C.)	649-202-00-6	270-704-2	68476-85-7	K

Substances	Index No	EC No	CAS No	Notes
Petroleum gases, liquefied, sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting liquefied petroleum gas mix to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₇ and boiling in the range of approximately - 40 °C to 80 °C.)	649-203-00-1	270-705-8	68476-86-8	K
Gases (petroleum), C _{3,4} , isobutane-rich; Petroleum gas (A complex combination of hydrocarbons from the distillation of saturated and unsaturated hydrocarbons usually ranging in carbon numbers from C ₃ through C ₆ , predominantly butane and isobutane. It consists of saturated and unsaturated hydrocarbons having carbon numbers in the range of C ₃ through C ₄ , predominantly isobutane.)	649-204-00-7	270-724-1	68477-33-8	K
Distillates (petroleum), C _{3,6} , piperylene-rich; Petroleum gas (A complex combination of hydrocarbons from the distillation of saturated and unsaturated aliphatic hydrocarbons usually ranging in the carbon numbers C ₃ through C ₆ . It consists of saturated and unsaturated hydrocarbons having carbon numbers in the range of C ₃ through C ₆ , predominantly piperylenes.)	649-205-00-2	270-726-2	68477-35-0	K
Gases (petroleum), butane splitter overheads; Petroleum gas (A complex combination of hydrocarbons obtained from the distillation of the butane stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-206-00-8	270-750-3	68477-69-0	K
Gases (petroleum), C _{2,3} ; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a catalytic fractionation process. It contains predominantly ethane, ethylene, propane, and propylene.)	649-207-00-3	270-751-9	68477-70-3	K
Gases (petroleum), catalytic-cracked gas oil depropaniser bottoms, C ₄ -rich acid-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked gas oil hydrocarbon stream and treated to remove hydrogen sulphide and other acidic components. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₄ .)	649-208-00-9	270-752-4	68477-71-4	K
Gases (petroleum), catalytic-cracked naphtha debutaniser bottoms, C _{3,5} -rich; Petroleum gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic cracked naphtha. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ .)	649-209-00-4	270-754-5	68477-72-5	K
Tail gas (petroleum), isomerised naphtha fractionation stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation products from isomerised naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-210-00-X	269-628-2	68308-08-7	K

Substances	Index No	EC No	CAS No	Notes
Foot's oil (petroleum), carbon-treated; Foot's oil (A complex combination of hydrocarbons obtained by the treatment of Foot's oil with activated carbon for the removal of trace constituents and impurities. It consists predominantly of saturated straight chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	649-211-00-5	308-126-0	97862-76-5	L
Distillates (petroleum), sweetened middle; Gas oil — unspecified (A complex combination of hydrocarbons obtained by subjecting a petroleum distillate to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₉ through C ₂₀ and boiling in the range of approximately 150 °C to 345 °C.)	649-212-00-0	265-088-7	64741-86-2	N
Gas oils (petroleum), solvent-refined; Gas oil — unspecified (A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₂₅ and boiling in the range of approximately 205 °C to 400 °C.)	649-213-00-6	265-092-9	64741-90-8	N
Distillates (petroleum), solvent-refined middle; Gas oil — unspecified (A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₉ through C ₂₀ and boiling in the range of approximately 150 °C to 345 °C.)	649-214-00-1	265-093-4	64741-91-9	N
Gas oils (petroleum), acid-treated; Gas oil — unspecified (A complex combination of hydrocarbons obtained as a raffinate from a sulphuric acid treating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₃ through C ₂₅ and boiling in the range of approximately 230 °C to 400 °C.)	649-215-00-7	265-112-6	64742-12-7	N
Distillates (petroleum), acid-treated middle; Gas oil — unspecified (A complex combination of hydrocarbons obtained as a raffinate from a sulphuric acid treating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₂₀ and boiling in the range of approximately 205 °C to 345 °C.)	649-216-00-2	265-113-1	64742-13-8	N
Distillates (petroleum), acid-treated light; Gas oil — unspecified (A complex combination of hydrocarbons obtained as a raffinate from a sulphuric acid treating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₉ through C ₁₆ and boiling in the range of approximately 150 °C to 290 °C.)	649-217-00-8	265-114-7	64742-14-9	N
Gas oils (petroleum), chemically neutralised; Gas oil — unspecified (A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₃ through C ₂₅ and boiling in the range of approximately 230 °C to 400 °C.)	649-218-00-3	265-129-9	64742-29-6	N

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), chemically neutralised middle; Gas oil — unspecified (A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₂₀ and boiling in the range of approximately 205 °C to 345 °C.)	649-219-00-9	265-130-4	64742-30-9	N
Distillates (petroleum), clay-treated middle; Gas oil — unspecified (A complex combination of hydrocarbons resulting from treatment of a petroleum fraction with natural or modified clay, usually in a percolation process to remove the trace amounts of polar compounds and impurities present. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₉ through C ₂₀ and boiling in the range of approximately 150 °C to 345 °C.)	649-220-00-4	265-139-3	64742-38-7	N
Distillates (petroleum), hydrotreated middle; Gas oil — unspecified (A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₂₅ and boiling in the range of approximately 205 °C to 400 °C.)	649-221-00-X	265-148-2	64742-46-7	N
Gas oils (petroleum), hydrodesulphurised; Gas oil — unspecified (A complex combination of hydrocarbons obtained from a petroleum stock by treating with hydrogen to convert organic sulphur to hydrogen sulphide which is removed. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₃ through C ₂₅ and boiling in the range of approximately 230 °C to 400 °C.)	649-222-00-5	265-182-8	64742-79-6	N
Distillates (petroleum), hydrodesulphurised middle; Gas oil — unspecified (A complex combination of hydrocarbons obtained from a petroleum stock by treating with hydrogen to convert organic sulphur to hydrogen sulphide which is removed. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₂₅ and boiling in the range of approximately 205 °C to 400 °C.)	649-223-00-0	265-183-3	64742-80-9	N
Distillates (petroleum), catalytic reformer fractionator residue, high-boiling; Gas oil — unspecified (A complex combination of hydrocarbons from the distillation of catalytic reformer fractionator residue. It boils in the range of approximately 343 °C to 399 °C.)	649-228-00-8	270-719-4	68477-29-2	N
Distillates (petroleum), catalytic reformer fractionator residue, intermediate-boiling; Gas oil — unspecified (A complex combination of hydrocarbons from the distillation of catalytic reformer fractionator residue. It boils in the range of approximately 288 °C to 371 °C.)	649-229-00-3	270-721-5	68477-30-5	N
Distillates (petroleum), catalytic reformer fractionator residue, low-boiling; Gas oil — unspecified (The complex combination of hydrocarbons from the distillation of catalytic reformer fractionator residue. It boils approximately below 288 °C.)	649-230-00-9	270-722-0	68477-31-6	N

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), highly refined middle; Gas oil — unspecified (A complex combination of hydrocarbons obtained by the subsection of a petroleum fraction to several of the following steps: filtration, centrifugation, atmospheric distillation, vacuum distillation, acidification, neutralisation and clay treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₀ through C ₂₀ .)	649-231-00-4	292-615-8	90640-93-0	N
Distillates (petroleum) catalytic reformer, heavy aromatic concentrate; Gas oil — unspecified (A complex combination of hydrocarbons obtained from the distillation of a catalytically reformed petroleum cut. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₁₀ through C ₁₆ and boiling in the range of approximately 200 °C to 300 °C.)	649-232-00-X	295-294-2	91995-34-5	N
Gas oils, paraffinic; Gas oil — unspecified (A distillate obtained from the redistillation of a complex combination of hydrocarbons obtained by the distillation of the effluents from a severe catalytic hydrotreatment of paraffins. It boils in the range of approximately 190 °C to 330 °C.)	649-233-00-5	300-227-8	93924-33-5	N
Naphtha (petroleum), solvent-refined hydrodesulphurised heavy; Gas oil — unspecified	649-234-00-0	307-035-3	97488-96-5	N
Hydrocarbons, C ₁₆₋₂₀ , hydrotreated middle distillate, distillation lights; Gas oil — unspecified (A complex combination of hydrocarbons obtained as first runnings from the vacuum distillation of effluents from the treatment of a middle distillate with hydrogen. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₆ through C ₂₀ and boiling in the range of approximately 290 °C to 350 °C. It produces a finished oil having a viscosity of 2 10 ⁻⁶ m ² .s ⁻¹ at 100 °C.)	649-235-00-6	307-659-6	97675-85-9	N
Hydrocarbons, C ₁₂₋₂₀ , hydrotreated paraffinic, distillation lights; Gas oil — unspecified (A complex combination of hydrocarbons obtained as first runnings from the vacuum distillation of effluents from the treatment of heavy paraffins with hydrogen in the presence of a catalyst. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₂ through C ₂₀ and boiling in the range of approximately 230 °C to 350 °C. It produces a finished oil having a viscosity of 2 10 ⁻⁶ m ² .s ⁻¹ at 100 °C.)	649-236-00-1	307-660-1	97675-86-0	N
Hydrocarbons, C ₁₁₋₁₇ , solvent-extd. light naphthenic; Gas oil — unspecified (A complex combination of hydrocarbons obtained by extraction of the aromatics from a light naphthenic distillate having a viscosity of 2,2 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₁₇ and boiling in the range of approximately 200 °C to 300 °C.)	649-237-00-7	307-757-9	97722-08-2	N
Gas oils, hydrotreated; Gas oil — unspecified (A complex combination of hydrocarbons obtained from the redistillation of the effluents from the treatment of paraffins with hydrogen in the presence of a catalyst. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₇ through C ₂₇ and boiling in the range of approximately 330 °C to 340 °C.)	649-238-00-2	308-128-1	97862-78-7	N

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), carbon-treated light paraffinic; Gas oil — unspecified (A complex combination of hydrocarbons obtained by the treatment of a petroleum oil fraction with activated charcoal for the removal of traces of polar constituents and impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₂ through C ₂₈ .)	649-239-00-8	309-667-5	100683-97-4	N
Distillates (petroleum), intermediate paraffinic, carbon-treated; Gas oil — unspecified (A complex combination of hydrocarbons obtained by the treatment of petroleum with activated charcoal for the removal of trace polar constituents and impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₆ through C ₃₆ .)	649-240-00-3	309-668-0	100683-98-5	N
Distillates (petroleum), intermediate paraffinic, clay-treated; Gas oil — unspecified (A complex combination of hydrocarbons obtained by the treatment of petroleum with bleaching earth for the removal of trace polar constituents and impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₆ through C ₃₆ .)	649-241-00-9	309-669-6	100683-99-6	N
Alkanes, C ₁₂₋₂₆ -branched and linear;	649-242-00-4	292-454-3	90622-53-0	N
Lubricating greases; Grease (A complex combination of hydrocarbons having carbon numbers predominantly in the range of C ₁₂ through C ₅₀ . May contain organic salts of alkali metals, alkaline earth metals, and/or aluminium compounds.)	649-243-00-X	278-011-7	74869-21-9	N
Slack wax (petroleum); Slack wax (A complex combination of hydrocarbons obtained from a petroleum fraction by solvent crystallisation (solvent dewaxing) or as a distillation fraction from a very waxy crude. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₂₀ .)	649-244-00-5	265-165-5	64742-61-6	N
Slack wax (petroleum), acid-treated; Slack wax (A complex combination of hydrocarbons obtained as a raffinate by treatment of a petroleum slack wax fraction with sulphuric acid treating process. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₂₀ .)	649-245-00-0	292-659-8	90669-77-5	N
Slack wax (petroleum), clay-treated; Slack wax (A complex combination of hydrocarbons obtained by treatment of a petroleum slack wax fraction with natural or modified clay in either a contacting or percolation process. It consists predominantly of saturated straight and branched hydrocarbons having carbon numbers predominantly greater than C ₂₀ .)	649-246-00-6	292-660-3	90669-78-6	N
Slack wax (petroleum), hydrotreated; Slack wax (A complex combination of hydrocarbons obtained by treating slack wax with hydrogen in the presence of a catalyst. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₂₀ .)	649-247-00-1	295-523-6	92062-09-4	N

Substances	Index No	EC No	CAS No	Notes
Slack wax (petroleum), low-melting; Slack wax (A complex combination of hydrocarbons obtained from a petroleum fraction by solvent deparaffination. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	649-248-00-7	295-524-1	92062-10-7	N
Slack wax (petroleum), low-melting, hydrotreated; Slack wax (A complex combination of hydrocarbons obtained by treatment of low-melting petroleum slack wax with hydrogen in the presence of a catalyst. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	649-249-00-2	295-525-7	92062-11-8	N
Slack wax (petroleum), low-melting, carbon-treated; Slack wax (A complex combination of hydrocarbons obtained by the treatment of low-melting slack wax with activated carbon for the removal of trace polar constituents and impurities. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	649-250-00-8	308-155-9	97863-04-2	N
Slack wax (petroleum), low-melting, clay-treated; Slack wax (A complex combination of hydrocarbons obtained by the treatment of low-melting petroleum slack wax with bentonite for removal of trace polar constituents and impurities. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	649-251-00-3	308-156-4	97863-05-3	N
Slack wax (petroleum), low-melting, silicic acid-treated; Slack wax (A complex combination of hydrocarbons obtained by the treatment of low-melting petroleum slack wax with silicic acid for the removal of trace polar constituents and impurities. It consists predominantly of saturated straight and branched chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	649-252-00-9	308-158-5	97863-06-4	N
Slack wax (petroleum), carbon-treated; Slack wax (A complex combination of hydrocarbons obtained by treatment of petroleum slack wax with activated charcoal for the removal of trace polar constituents and impurities.)	649-253-00-4	309-723-9	100684-49-9	N
Petrolatum; Petrolatum (A complex combination of hydrocarbons obtained as a semi-solid from dewaxing paraffinic residual oil. It consists predominantly of saturated crystalline and liquid hydrocarbons having carbon numbers predominantly greater than C ₂₅ .)	649-254-00-X	232-373-2	8009-03-8	N
Petrolatum (petroleum), oxidised; Petrolatum (A complex combination of organic compounds, predominantly high molecular weight carboxylic acids, obtained by the air oxidation of petrolatum.)	649-255-00-5	265-206-7	64743-01-7	N

Substances	Index No	EC No	CAS No	Notes
Petrolatum (petroleum), alumina-treated; Petrolatum (A complex combination of hydrocarbons obtained when petrolatum is treated with Al ₂ O ₃ to remove polar components and impurities. It consists predominantly of saturated, crystalline, and liquid hydrocarbons having carbon numbers predominantly greater than C ₂₅ .)	649-256-00-0	285-098-5	85029-74-9	N
Petrolatum (petroleum), hydrotreated; Petrolatum (A complex combination of hydrocarbons obtained as a semi-solid from dewaxed paraffinic residual oil treated with hydrogen in the presence of a catalyst. It consists predominantly of saturated, microcrystalline, and liquid hydrocarbons having carbon numbers predominantly greater than C ₂₀ .)	649-257-00-6	295-459-9	92045-77-7	N
Petrolatum (petroleum), carbon-treated; Petrolatum (A complex combination of hydrocarbons obtained by the treatment of petroleum petrolatum with activated carbon for the removal of trace polar constituents and impurities. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly greater than C ₂₀ .)	649-258-00-1	308-149-6	97862-97-0	N
Petrolatum (petroleum), silicic acid-treated; Petrolatum (A complex combination of hydrocarbons obtained by the treatment of petroleum petrolatum with silicic acid for the removal of trace polar constituents and impurities. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly greater than C ₂₀ .)	649-259-00-7	308-150-1	97862-98-1	N
Petrolatum (petroleum), clay-treated; Petrolatum (A complex combination of hydrocarbons obtained by treatment of petrolatum with bleaching earth for the removal of traces of polar constituents and impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of greater than C ₂₅ .)	649-260-00-2	309-706-6	100684-33-1	N
Gasoline, natural; Low boiling point naphtha (A complex combination of hydrocarbons separated from natural gas by processes such as refrigeration or absorption. It consists predominantly of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₈ and boiling in the range of approximately - 20 °C to 120 °C.)	649-261-00-8	232-349-1	8006-61-9	P
Naphtha; Low boiling point naphtha (Refined, partly refined, or unrefined petroleum products by the distillation of natural gas. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₆ and boiling in the range of approximately 100 °C to 200 °C.)	649-262-00-3	232-443-2	8030-30-6	P
Ligroine; Low boiling point naphtha (A complex combination of hydrocarbons obtained by the fractional distillation of petroleum. This fraction boils in a range of approximately 20 °C to 135 °C.)	649-263-00-9	232-453-7	8032-32-4	P

Substances	Index No	EC No	CAS No	Notes
Naphtha (petroleum), heavy straight-run; Low boiling point naphtha (A complex combination of hydrocarbons produced by distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₁₂ and boiling in the range of approximately 65 °C to 230 °C.)	649-264-00-4	265-041-0	64741-41-9	P
Naphtha (petroleum), full-range straight-run; Low boiling point naphtha (A complex combination of hydrocarbons produced by distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₁ and boiling in the range of approximately - 20 °C to 220 °C.)	649-265-00-X	265-042-6	64741-42-0	P
Naphtha (petroleum), light straight-run; Low boiling point naphtha (A complex combination of hydrocarbons produced by distillation of crude oil. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₀ and boiling in the range of approximately - 20 °C to 180 °C.)	649-266-00-5	265-046-8	64741-46-4	P
Solvent naphtha (petroleum), light aliph.; Low boiling point naphtha (A complex combination of hydrocarbons obtained from the distillation of crude oil or natural gasoline. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₁₀ and boiling in the range of approximately 35 °C to 160 °C.)	649-267-00-0	265-192-2	64742-89-8	P
Distillates (petroleum), straight-run light; Low boiling point naphtha (A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₇ and boiling in the range of approximately - 88 °C to 99 °C.)	649-268-00-6	270-077-5	68410-05-9	P
Gasoline, vapour-recovery; Low boiling point naphtha (A complex combination of hydrocarbons separated from the gases from vapour recovery systems by cooling. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₁ and boiling in the range of approximately - 20 °C to 196 °C.)	649-269-00-1	271-025-4	68514-15-8	P
Gasoline, straight-run, topping-plant; Low boiling point naphtha (A complex combination of hydrocarbons produced from the topping plant by the distillation of crude oil. It boils in the range of approximately 36,1 °C to 193,3 °C.)	649-270-00-7	271-727-0	68606-11-1	P
Naphtha (petroleum), unsweetened; Low boiling point naphtha (A complex combination of hydrocarbons produced from the distillation of naphtha streams from various refinery processes. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₁₂ and boiling in the range of approximately 0 °C to 230 °C.)	649-271-00-2	272-186-3	68783-12-0	P

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), light straight-run gasoline fractionation stabiliser overheads; Low boiling point naphtha (A complex combination of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₆ .)	649-272-00-8	272-931-2	68921-08-4	P
Naphtha (petroleum), heavy straight run, arom.-contg.; Low boiling point naphtha (A complex combination of hydrocarbons obtained from a distillation process of crude petroleum. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₈ through C ₁₂ and boiling in the range of approximately 130 °C to 210 °C.)	649-273-00-3	309-945-6	101631-20-3	P
Naphtha (petroleum), full-range alkylate; Low boiling point modified naphtha (A complex combination of hydrocarbons produced by distillation of the reaction products of isobutane with monoolefinic hydrocarbons usually ranging in carbon numbers from C ₃ through C ₅ . It consists of predominantly branched chain saturated hydro-carbons having carbon numbers predominantly in the range of C ₇ through C ₁₂ and boiling in the range of approximately 90 °C to 220 °C.)	649-274-00-9	265-066-7	64741-64-6	P
Naphtha (petroleum), heavy alkylate; Low boiling point modified naphtha (A complex combination of hydrocarbons produced by distillation of the reaction products of isobutane with monoolefinic hydrocarbons usually ranging in carbon numbers from C ₃ to C ₅ . It consists of predominantly branched chain saturated hydrocarbons having carbon numbers predominantly in the range of C ₉ through C ₁₂ and boiling in the range of approximately 150 °C to 220 °C.)	649-275-00-4	265-067-2	64741-65-7	P
Naphtha (petroleum), light alkylate; Low boiling point modified naphtha (A complex combination of hydrocarbons produced by distillation of the reaction products of isobutane with monoolefinic hydrocarbons usually ranging in carbon numbers from C ₃ through C ₅ . It consists of predominantly branched chain saturated hydro-carbons having carbon numbers predominantly in the range of C ₇ through C ₁₀ and boiling in the range of approximately 90 °C to 160 °C.)	649-276-00-X	265-068-8	64741-66-8	P
Naphtha (petroleum), isomerisation; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained from catalytic isomerisation of straight chain paraffinic C ₄ through C ₆ hydrocarbons. It consists predominantly of saturated hydrocarbons such as isobutane, isopentane, 2,2-dimethylbutane, 2-methylpentane, and 3-methylpentane.)	649-277-00-5	265-073-5	64741-70-4	P
Naphtha (petroleum), solvent-refined light; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₁₁ and boiling in the range of approximately 35 °C to 190 °C.)	649-278-00-0	265-086-6	64741-84-0	P

Substances	Index No	EC No	CAS No	Notes
Naphtha (petroleum), solvent-refined heavy; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₇ through C ₁₂ and boiling in the range of approximately 90 °C to 230 °C.)	649-279-00-6	265-095-5	64741-92-0	P
Raffinates (petroleum), catalytic reformer ethylene glycol-water countercurrent extracts; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained as the raffinate from the UDEX extraction process on the catalytic reformer stream. It consists of saturated hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₉ .)	649-280-00-1	270-088-5	68410-71-9	P
Raffinates (petroleum), reformer, Lurgi unit-separated; Low boiling point modified naphtha (The complex combination of hydrocarbons obtained as a raffinate from a Lurgi separation unit. It consists predominantly of non-aromatic hydrocarbons with various small amounts of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₈ .)	649-281-00-7	270-349-3	68425-35-4	P
Naphtha (petroleum), full-range alkylate, butane-contg.; Low boiling point modified naphtha (A complex combination of hydrocarbons produced by the distillation of the reaction products of isobutane with monoolefinic hydrocarbons usually ranging in carbon numbers from C ₃ through C ₅ . It consists of predominantly branched chain saturated hydrocarbons having carbon numbers predominantly in the range of C ₇ through C ₁₂ with some butanes and boiling in the range of approximately 35 °C to 200 °C.)	649-282-00-2	271-267-0	68527-27-5	P
Distillates (petroleum), naphtha steam cracking-derived, solvent-refined light hydrotreated; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained as the raffinates from a solvent extraction process of hydrotreated light distillate from steam-cracked naphtha.)	649-283-00-8	295-315-5	91995-53-8	P
Naphtha (petroleum), C ₄₋₁₂ butane-alkylate, isooctane-rich; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained by alkylation of butanes. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₂ , rich in isooctane, and boiling in the range of approximately 35 °C to 210 °C.)	649-284-00-3	295-430-0	92045-49-3	P
Hydrocarbons, hydrotreated light naphtha distillates, solvent-refined; Low boiling point modified naphtha (A combination of hydrocarbons obtained from the distillation of hydrotreated naphtha followed by a solvent extraction and distillation process. It consists predominantly of saturated hydrocarbons boiling in the range of approximately 94 °C to 99 °C.)	649-285-00-9	295-436-3	92045-55-1	P
Naphtha (petroleum), isomerisation, C ₆ -fraction; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained by distillation of a gasoline which has been catalytically isomerised. It consists predominantly of hexane isomers boiling in the range of approximately 60 °C to 66 °C.)	649-286-00-4	295-440-5	92045-58-4	P

Substances	Index No	EC No	CAS No	Notes
Hydrocarbons, C _{6,7} , naphtha-cracking, solvent-refined; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained by the sorption of benzene from a catalytically fully hydrogenated benzene-rich hydrocarbon cut that was distillatively obtained from prehydrogenated cracked naphtha. It consists predominantly of paraffinic and naphthenic hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₇ and boiling in the range of approximately 70 °C to 100 °C.)	649-287-00-X	295-446-8	92045-64-2	P
Hydrocarbons, C ₆ -rich, hydrotreated light naphtha distillates, solvent-refined; Low boiling point modified naphtha (A complex combination of hydrocarbons obtained by distillation of hydrotreated naphtha followed by solvent extraction. It consists predominantly of saturated hydrocarbons and boiling in the range of approximately 65 °C to 70 °C.)	649-288-00-5	309-871-4	101316-67-0	P
Naphtha (petroleum), heavy catalytic cracked; Low boiling point cat-cracked naphtha (A complex combination of hydrocarbons produced by a distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₁₂ and boiling in the range of approximately 65 °C to 230 °C. It contains a relatively large proportion of unsaturated hydrocarbons.)	649-289-00-0	265-055-7	64741-54-4	P
Naphtha (petroleum), light catalytic cracked; Low boiling point cat-cracked naphtha (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₁ and boiling in the range of approximately -20 °C to 190 °C. It contains a relatively large proportion of unsaturated hydrocarbons.)	649-290-00-6	265-056-2	64741-55-5	P
Hydrocarbons, C _{3,11} , catalytic cracker distillates; Low boiling point cat-cracked naphtha (A complex combination of hydrocarbons produced by the distillations of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₁₁ and boiling in a range approximately up to 204 °C.)	649-291-00-1	270-686-6	68476-46-0	P
Naphtha (petroleum), catalytic cracked light distilled; Low boiling point cat-cracked naphtha (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-292-00-7	272-185-8	68783-09-5	P
Distillates (petroleum), naphtha steam cracking-derived, hydrotreated light arom.; Low boiling point cat-cracked naphtha (A complex combination of hydrocarbons obtained by treating a light distillate from steam-cracked naphtha. It consists predominantly of aromatic hydrocarbons.)	649-293-00-2	295-311-3	91995-50-5	P

Substances	Index No	EC No	CAS No	Notes
<p>Naphtha (petroleum), heavy catalytic cracked, sweetened; Low boiling point cat-cracked naphtha</p> <p>(A complex combination of hydrocarbons obtained by subjecting a catalytic cracked petroleum distillate to a sweetening process to convert mercaptans or to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₆ through C₁₂ and boiling in the range of approximately 60 °C to 200 °C.)</p>	649-294-00-8	295-431-6	92045-50-6	P
<p>Naphtha (petroleum), light catalytic cracked sweetened; Low boiling point cat-cracked naphtha</p> <p>(A complex combination of hydrocarbons obtained by subjecting naphtha from a catalytic cracking process to a sweetening process to convert mercaptans or to remove acidic impurities. It consists predominantly of hydrocarbons boiling in a range of approximately 35 °C to 210 °C.)</p>	649-295-00-3	295-441-0	92045-59-5	P
<p>Hydrocarbons, C₈₋₁₂, catalytic-cracking, chem. neutralised; Low boiling point cat-cracked naphtha</p> <p>(A complex combination of hydrocarbons produced by the distillation of a cut from the catalytic cracking process, having undergone an alkaline washing. It consists predominantly of hydrocarbons having carbon numbers in the range of C₈ through C₁₂ and boiling in the range of approximately 130 °C to 210 °C.)</p>	649-296-00-9	295-794-0	92128-94-4	P
<p>Hydrocarbons, C₈₋₁₂, catalytic cracker distillates; Low boiling point cat-cracked naphtha</p> <p>(A complex combination of hydrocarbons obtained by distillation of products from a catalytic cracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₈ through C₁₂ and boiling in the range of approximately 140 °C to 210 °C.)</p>	649-297-00-4	309-974-4	101794-97-2	P
<p>Hydrocarbons, C₈₋₁₂, catalytic cracking, chem. neutralised, sweetened; Low boiling point cat-cracked naphtha</p>	649-298-00-X	309-987-5	101896-28-0	P
<p>Naphtha (petroleum), light catalytic reformed; Low boiling point cat-reformed naphtha</p> <p>(A complex combination of hydrocarbons produced from the distillation of products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers predominantly in the range of C₅ through C₁₁ and boiling in the range of approximately 35 °C to 190 °C. It contains a relatively large proportion of aromatic and branched chain hydrocarbons. This stream may contain 10 % vol. or more benzene.)</p>	649-299-00-5	265-065-1	64741-63-5	P
<p>Naphtha (petroleum), heavy catalytic reformed; Low boiling point cat-reformed naphtha</p> <p>(A complex combination of hydrocarbons produced from the distillation of products from a catalytic reforming process. It consists of predominantly aromatic hydrocarbons having numbers predominantly in the range of C₇ through C₁₂ and boiling in the range of approximately 90 °C to 230 °C.)</p>	649-300-00-9	265-070-9	64741-68-0	P

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), catalytic reformed depentaniser; Low boiling point cat-reformed naphtha (A complex combination of hydrocarbons from the distillation of products from a catalytic reforming process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₆ and boiling in the range of approximately - 49 °C to 63 °C.)	649-301-00-4	270-660-4	68475-79-6	P
Hydrocarbons, C _{2,6} , C _{6,8} catalytic reformer; Low boiling point cat-reformed naphtha	649-302-00-X	270-687-1	68476-47-1	P
Residues (petroleum), C _{6,8} catalytic reformer; Low boiling point cat-reformed naphtha (A complex residuum from the catalytic reforming of C _{6,8} feed. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-303-00-5	270-794-3	68478-15-9	P
Naphtha (petroleum), light catalytic reformed, arom.-free; Low boiling point cat-reformed naphtha (A complex combination of hydrocarbons obtained from distillation of products from a catalytic reforming process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₈ and boiling in the range of approximately 35 °C to 120 °C. It contains a relatively large proportion of branched chain hydrocarbons with the aromatic components removed.)	649-304-00-0	270-993-5	68513-03-1	P
Distillates (petroleum), catalytic reformed straight-run naphtha overheads; Low boiling point cat-reformed naphtha (A complex combination of hydrocarbons obtained by the catalytic reforming of straight-run naphtha followed by the fractionation of the total effluent. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-305-00-6	271-008-1	68513-63-3	P
Petroleum products, hydrofiner-powerformer reformates; Low boiling point cat-reformed naphtha (The complex combination of hydrocarbons obtained in a hydrofiner-powerformer process and boiling in a range of approximately 27 °C to 210 °C.)	649-306-00-1	271-058-4	68514-79-4	P
Naphtha (petroleum, full-range reformed; Low boiling point cat-reformed naphtha (A complex combination of hydrocarbons produced by the distillation of the products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₁₂ and boiling in the range of approximately 35 °C to 230 °C.)	649-307-00-7	272-895-8	68919-37-9	P
Naphtha (petroleum), catalytic reformed; Low boiling point cat-reformed naphtha (A complex combination of hydrocarbons produced by the distillation of products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₂ and boiling in the range of approximately 30 °C to 220 °C. It contains a relatively large proportion of aromatic and branched chain hydrocarbons. This stream may contain 10 % vol. or more benzene.)	649-308-00-2	273-271-8	68955-35-1	P

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), catalytic reformed hydrotreated light, C ₈₋₁₂ arom. fraction; Low boiling point cat-reformed naphtha (A complex combination of alkylbenzenes obtained by the catalytic reforming of petroleum naphtha. It consists predominantly of alkylbenzenes having carbon numbers predominantly in the range of C ₈ through C ₁₀ and boiling in the range of approximately 160 °C to 180 °C.)	649-309-00-8	285-509-8	85116-58-1	P
Aromatic hydrocarbons, C ₈ , catalytic reforming-derived; Low boiling point cat-reformed naphtha	649-310-00-3	295-279-0	91995-18-5	P
Aromatic hydrocarbons, C ₇₋₁₂ , C ₈ -rich; Low boiling point cat-reformed naphtha (A complex combination of hydrocarbons obtained by separation from the platformate-containing fraction. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₇ through C ₁₂ (primarily C ₈) and can contain nonaromatic hydrocarbons, both boiling in the range of approximately 130 °C to 200 °C.)	649-311-00-9	297-401-8	93571-75-6	P
Gasoline, C ₅₋₁₁ , high-octane stabilised reformed; Low boiling point cat-reformed naphtha (A complex high octane combination of hydrocarbons obtained by the catalytic dehydrogenation of a predominantly naphthenic naphtha. It consists predominantly of aromatics and non-aromatics having carbon numbers predominantly in the range of C ₅ through C ₁₁ and boiling in the range of approximately 45 °C to 185 °C.)	649-312-00-4	297-458-9	93572-29-3	P
Hydrocarbons, C ₇₋₁₂ , C _{>9} -arom.-rich, reforming heavy fraction; Low boiling point cat-reformed naphtha (A complex combination of hydrocarbons obtained by separation from the platformate-containing fraction. It consists predominantly of nonaromatic hydrocarbons having carbon numbers predominantly in the range of C ₇ through C ₁₂ and boiling in the range of approximately 120 °C to 210 °C and C ₉ and higher aromatic hydrocarbons.)	649-313-00-X	297-465-7	93572-35-1	P
Hydrocarbons, C ₅₋₁₁ , nonaroms.-rich, reforming light fraction; Low boiling point cat-reformed naphtha (A complex combination of hydrocarbons obtained by separation from the platformate-containing fraction. It consists predominantly of nonaromatic hydrocarbons having carbon numbers predominantly in the range of C ₅ to C ₁₁ and boiling in the range of approximately 35 °C to 125 °C, benzene and toluene.)	649-314-00-5	297-466-2	93572-36-2	P
Foots oil (petroleum), silicic acid-treated; Foots oil (A complex combination of hydrocarbons obtained by the treatment of Foots oil with silicic acid for removal of trace constituents and impurities. It consists predominantly of straight chain hydrocarbons having carbon numbers predominantly greater than C ₁₂ .)	649-315-00-0	308-127-6	97862-77-6	L

Substances	Index No	EC No	CAS No	Notes
<p>Naphtha (petroleum), light thermal cracked; Low boiling point thermally cracked naphtha</p> <p>(A complex combination of hydrocarbons from distillation of products from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C₄ through C₈ and boiling in the range of approximately – 10 °C to 130 °C.)</p>	649-316-00-6	265-075-6	64741-74-8	P
<p>Naphtha (petroleum), heavy thermal cracked; Low boiling point thermally cracked naphtha</p> <p>(A complex combination of hydrocarbons from distillation of products from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C₆ through C₁₂ and boiling in the range of approximately 65 °C to 220 °C.)</p>	649-317-00-1	265-085-0	64741-83-9	P
<p>Distillates (petroleum), heavy aromatic; Low boiling point thermally cracked naphtha</p> <p>(The complex combination of hydrocarbons from the distillation of products from the thermal cracking of ethane and propane. This higher boiling fraction consists predominantly of C₅-C₇ aromatic hydrocarbons with some unsaturated aliphatic hydrocarbons having a carbon number predominantly of C₅. This stream may contain benzene.)</p>	649-318-00-7	267-563-4	67891-79-6	P
<p>Distillates (petroleum), light aromatic; Low boiling point thermally cracked naphtha</p> <p>(The complex combination of hydrocarbons from the distillation of products from the thermal cracking of ethane and propane. This lower boiling fraction consists predominantly of C₅-C₇ aromatic hydrocarbons with some unsaturated aliphatic hydrocarbons having a carbon number predominantly of C₅. This stream may contain benzene.)</p>	649-319-00-2	267-565-5	67891-80-9	P
<p>Distillates (petroleum), naphtha-raffinate pyrolyzate-derived, gasoline-blending; Low boiling point thermally cracked naphtha</p> <p>(The complex combination of hydrocarbons obtained by the pyrolysis fractionation at 816 °C of naphtha and raffinate. It consists predominantly of hydrocarbons having a carbon number of C₉ and boiling at approximately 204 °C.)</p>	649-320-00-8	270-344-6	68425-29-6	P
<p>Aromatic hydrocarbons, C₆₋₈, naphtha-raffinate pyrolyzate-derived; Low boiling point thermally cracked naphtha</p> <p>(A complex combination of hydrocarbons obtained by the fractionation pyrolysis at 816 °C of naphtha and raffinate. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₆ through C₈, including benzene.)</p>	649-321-00-3	270-658-3	68475-70-7	P
<p>Distillates (petroleum), thermal cracked naphtha and gas oil; Low boiling point thermally cracked naphtha</p> <p>(A complex combination of hydrocarbons produced by distillation of thermally cracked naphtha and/or gas oil. It consists predominantly of olefinic hydrocarbons having a carbon number of C₅ and boiling in the range of approximately 33 °C to 60 °C.)</p>	649-322-00-9	271-631-9	68603-00-9	P

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), thermal cracked naphtha and gas oil, C ₅ -dimercontg.; Low boiling point thermally cracked naphtha (A complex combination of hydrocarbons produced by the extractive distillation of thermal cracked naphtha and/or gas oil. It consists predominantly of hydrocarbons having a carbon number of C ₅ with some dimerised C ₅ olefins and boiling in the range of approximately 33 °C to 184 °C.)	649-323-00-4	271-632-4	68603-01-0	P
Distillates (petroleum), thermal cracked naphtha and gas oil, extractive; Low boiling point thermally cracked naphtha (A complex combination of hydrocarbons produced by the extractive distillation of thermal cracked naphtha and/or gas oil. It consists of paraffinic and olefinic hydrocarbons predominantly isoamylenes such as 2-methyl-1-butene and 2-methyl-2-butene and boiling in the range of approximately 31 °C to 40 °C.)	649-324-00-X	271-634-5	68603-03-2	P
Distillates (petroleum), light thermal cracked, debutanised aromatic; Low boiling point thermally cracked naphtha (A complex combination of hydrocarbons produced by the distillation of products from a thermal cracking process. It consists predominantly of aromatic hydrocarbons, primarily benzene.)	649-325-00-5	273-266-0	68955-29-3	P
Naphtha (petroleum), light thermal cracked, sweetened; Low boiling point thermally cracked naphtha (A complex combination of hydrocarbons obtained by subjecting a petroleum distillate from the high temperature thermal cracking of heavy oil fractions to a sweetening process to convert mercaptans. It consists predominantly of aromatics, olefins and saturated hydrocarbons boiling in the range of approximately 20 °C to 100 °C.)	649-326-00-0	295-447-3	92045-65-3	P
Naphtha (petroleum), hydrotreated heavy; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₁₃ and boiling in the range of approximately 65 °C to 230 °C.)	649-327-00-6	265-150-3	64742-48-9	P
Naphtha (petroleum), hydrotreated light; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₁ and boiling in the range of approximately - 20 °C to 190 °C.)	649-328-00-1	265-151-9	64742-49-0	P
Naphtha (petroleum), hydrodesulphurised light; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained from a catalytic hydrodesulphurisation process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₁ and boiling in the range of approximately - 20 °C to 190 °C.)	649-329-00-7	265-178-6	64742-73-0	P

Substances	Index No	EC No	CAS No	Notes
<p>Naphtha (petroleum), hydrodesulphurised heavy; Low boiling point hydrogen treated naphtha</p> <p>(A complex combination of hydrocarbons obtained from a catalytic hydrodesulphurisation process. It consists of hydrocarbons having carbon numbers predominantly in the range of C₇ through C₁₂ and boiling in the range of approximately 90 °C to 230 °C.)</p>	649-330-00-2	265-185-4	64742-82-1	P
<p>Distillates (petroleum), hydrotreated middle, intermediate boiling; Low boiling point hydrogen treated naphtha</p> <p>(A complex combination of hydrocarbons obtained by the distillation of products from a middle distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C₅ through C₁₀ and boiling in the range of approximately 127 °C to 188 °C.)</p>	649-331-00-8	270-092-7	68410-96-8	P
<p>Distillates (petroleum), light distillate hydrotreating process, low-boiling; Low boiling point hydrogen treated naphtha</p> <p>(A complex combination of hydrocarbons obtained by the distillation of products from the light distillate hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C₆ through C₉ and boiling in the range of approximately 3 °C to 194 °C.)</p>	649-332-00-3	270-093-2	68410-97-9	P
<p>Distillates (petroleum), hydrotreated heavy naphtha, deisohexaniser overheads; Low boiling point hydrogen treated naphtha</p> <p>(A complex combination of hydrocarbons obtained by distillation of the products from a heavy naphtha hydrotreating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C₃ through C₆ and boiling in the range of approximately - 49 °C to 68 °C.)</p>	649-333-00-9	270-094-8	68410-98-0	P
<p>Solvent naphtha (petroleum), light arom., hydrotreated; Low boiling point hydrogen treated naphtha</p> <p>(A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₈ through C₁₀ and boiling in the range of approximately 135 °C to 210 °C.)</p>	649-334-00-4	270-988-8	68512-78-7	P
<p>Naphtha (petroleum), hydrodesulphurised thermal cracked light; Low boiling point hydrogen treated naphtha</p> <p>(A complex combination of hydrocarbons obtained by fractionation of hydrodesulphurised thermal cracker distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₅ to C₁₁ and boiling in the range of approximately 23 °C to 195 °C.)</p>	649-335-00-X	285-511-9	85116-60-5	P
<p>Naphtha (petroleum), hydrotreated light, cycloalkane-contg.; Low boiling point hydrogen treated naphtha</p> <p>(A complex combination of hydrocarbons obtained from the distillation of a petroleum fraction. It consists predominantly of alkanes and cycloalkanes boiling in the range of approximately - 20 °C to 190 °C.)</p>	649-336-00-5	285-512-4	85116-61-6	P

Substances	Index No	EC No	CAS No	Notes
Naphtha (petroleum), heavy steam-cracked, hydrogenated; Low boiling point hydrogen treated naphtha	649-337-00-0	295-432-1	92045-51-7	P
Naphtha (petroleum), hydrodesulphurised full-range; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained from a catalytic hydrodesulphurisation process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₁ and boiling in the range of approximately 30 °C to 250 °C.)	649-338-00-6	295-433-7	92045-52-8	P
Naphtha (petroleum), hydrotreated light steam-cracked; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained by treating a petroleum fraction, derived from a pyrolysis process, with hydrogen in the presence of a catalyst. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₁₁ and boiling in the range of approximately 35 °C to 190 °C.)	649-339-00-1	295-438-4	92045-57-3	P
Hydrocarbons, C ₄₋₁₂ , naphtha-cracking, hydrotreated; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained by distillation from the product of naphtha steam cracking process and subsequent catalytic selective hydrogenation of gum formers. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₂ and boiling in the range of approximately 30 °C to 230 °C.)	649-340-00-7	295-443-1	92045-61-9	P
Solvent naphtha (petroleum), hydrotreated light naphthenic; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists predominantly of cycloparaffinic hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₇ and boiling in the range of approximately 73 °C to 85 °C.)	649-341-00-2	295-529-9	92062-15-2	P
Naphtha (petroleum), light steam-cracked, hydrogenated; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons produced from the separation and subsequent hydrogenation of the products of a steam-cracking process to produce ethylene. It consists predominantly of saturated and unsaturated paraffins, cyclic paraffins and cyclic aromatic hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₀ and boiling in the range of approximately 50 °C to 200 °C. The proportion of benzene hydrocarbons may vary up to 30 % wt and the stream may also contain small amounts of sulphur and oxygenated compounds.)	649-342-00-8	296-942-7	93165-55-0	P
Hydrocarbons, C ₆₋₁₁ , hydrotreated, dearomatised; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained as solvents which have been subjected to hydrotreatment in order to convert aromatics to naphthenes by catalytic hydrogenation.)	649-343-00-3	297-852-0	93763-33-8	P
Hydrocarbons, C ₉₋₁₂ , hydrotreated, dearomatised; Low boiling point hydrogen treated naphtha (A complex combination of hydrocarbons obtained as solvents which have been subjected to hydrotreatment in order to convert aromatics to naphthenes by catalytic hydrogenation.)	649-344-00-9	297-853-6	93763-34-9	P

Substances	Index No	EC No	CAS No	Notes
Stoddard solvent; Low boiling point naphtha — unspecified (A colourless, refined petroleum distillate that is free from rancid or objectionable odours and that boils in a range of approximately 149 °C to 205 °C.)	649-345-00-4	232-489-3	8052-41-3	P
Natural gas condensates (petroleum); Low boiling point naphtha — unspecified (A complex combination of hydrocarbons separated as a liquid from natural gas in a surface separator by retrograde condensation. It consists mainly of hydrocarbons having carbon numbers predominantly in the range of C ₂ to C ₂₀ . It is a liquid at atmospheric temperature and pressure.)	649-346-00-X	265-047-3	64741-47-5	P
Natural gas (petroleum), raw liquid mix; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons separated as a liquid from natural gas in a gas recycling plant by processes such as refrigeration or absorption. It consists mainly of saturated aliphatic hydrocarbons having carbon numbers in the range of C ₂ through C ₈ .)	649-347-00-5	265-048-9	64741-48-6	P
Naphtha (petroleum), light hydrocracked; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons from distillation of the products from a hydrocracking process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₀ , and boiling in the range of approximately - 20 °C to 180 °C.)	649-348-00-0	265-071-4	64741-69-1	P
Naphtha (petroleum) heavy hydrocracked; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons from distillation of the products from a hydrocracking process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₁₂ , and boiling in the range of approximately 65 °C to 230 °C.)	649-349-00-6	265-079-8	64741-78-2	P
Naphtha (petroleum), sweetened; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained by subjecting a petroleum naphtha to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₂ and boiling in the range of approximately - 10 °C to 230 °C.)	649-350-00-1	265-089-2	64741-87-3	P
Naphtha (petroleum), acid-treated; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained as a raffinate from a sulphuric acid treating process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₇ through C ₁₂ and boiling in the range of approximately 90 °C to 230 °C.)	649-351-00-7	265-115-2	64742-15-0	P

Substances	Index No	EC No	CAS No	Notes
Naphtha (petroleum), chemically neutralised heavy; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₆ through C ₁₂ and boiling in the range of approximately 65 °C to 230 °C.)	649-352-00-2	265-122-0	64742-22-9	P
Naphtha (petroleum), chemically neutralised light; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons produced by a treating process to remove acidic materials. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₁ and boiling in the range of approximately - 20 °C to 190 °C.)	649-353-00-8	265-123-6	64742-23-0	P
Naphtha (petroleum), catalytic dewaxed; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained from the catalytic dewaxing of a petroleum fraction. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₁₂ and boiling in the range of approximately 35 °C to 230 °C.)	649-354-00-3	265-170-2	64742-66-1	P
Naphtha (petroleum), light steam-cracked; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained by the distillation of the products from a steam cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₁ and boiling in the range of approximately - 20 °C to 190 °C. This stream is likely to contain 10 % vol. or more benzene.)	649-355-00-9	265-187-5	64742-83-2	P
Solvent naphtha (petroleum), light aromatic; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained from distillation of aromatic streams. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₈ through C ₁₀ and boiling in the range of approximately 135 °C to 210 °C.)	649-356-00-4	265-199-0	64742-95-6	P
Aromatic hydrocarbons, C ₆₋₁₀ , acid-treated, neutralised; Low boiling point naphtha — unspecified	649-357-00-X	268-618-5	68131-49-7	P
Distillates (petroleum), C _{3,5} , 2-methyl-2-butene-rich; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons from the distillation of hydrocarbons usually ranging in carbon numbers from C ₃ through C ₅ , predominantly isopentane and 3-methyl-1-butene. It consists of saturated and unsaturated hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly 2-methyl-2-butene.)	649-358-00-5	270-725-7	68477-34-9	P
Distillates (petroleum), polymd. steam-cracked petroleum distillates, C ₅₋₁₂ fraction; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained from the distillation of polymerised steam-cracked petroleum distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₁₂ .)	649-359-00-0	270-735-1	68477-50-9	P

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), steam-cracked, C ₅₋₁₂ fraction; Low boiling point naphtha — unspecified (A complex combination of organic compounds obtained by the distillation of products from a steam cracking process. It consists of unsaturated hydrocarbons having carbon numbers predominantly in the range of C ₅ through C ₁₂ .)	649-360-00-6	270-736-7	68477-53-2	P
Distillates (petroleum), steam-cracked, C ₅₋₁₀ fraction, mixed with light steam-cracked petroleum naphtha C ₅ fraction; Low boiling point naphtha — unspecified	649-361-00-1	270-738-8	68477-55-4	P
Extracts (petroleum), cold-acid, C ₄₋₆ ; Low boiling point naphtha — unspecified (A complex combination of organic compounds produced by cold acid unit extraction of saturated and unsaturated aliphatic hydrocarbons usually ranging in carbon numbers from C ₃ through C ₆ , predominantly pentanes and amylenes. It consists predominantly of saturated and unsaturated hydrocarbons having carbon numbers in the range of C ₄ through C ₆ , predominantly C ₅ .)	649-362-00-7	270-741-4	68477-61-2	P
Distillates (petroleum), depentaniser overheads; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained from a catalytic cracked gas stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₆ .)	649-363-00-2	270-771-8	68477-894-4	P
Residues (petroleum), butane splitter bottoms; Low boiling point naphtha — unspecified (A complex residuum from the distillation of butane stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₆ .)	649-364-00-8	270-791-7	68478-12-6	P
Residual oils (petroleum), deisobutaniser tower; Low boiling point naphtha — unspecified (A complex residuum from the atmospheric distillation of the butane-butylene stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₆ .)	649-365-00-3	270-795-9	68478-16-0	P
Naphtha (petroleum), full-range coker; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons produced by the distillation of products from a fluid coker. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₁₅ and boiling in the range of approximately 43 °C to 250 °C.)	649-366-00-9	270-991-4	68513-02-0	P
Naphtha (petroleum), steam-cracked middle aromatic; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons produced by the distillation of products from a steam-cracking process. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₇ through C ₁₂ and boiling in the range of approximately 130 °C to 220 °C.)	649-367-00-4	271-138-9	68516-20-1	P

Substances	Index No	EC No	CAS No	Notes
<p>Naphtha (petroleum), clay-treated full-range straight-run; Low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons resulting from treatment of full-range straight-run, naphtha with natural or modified clay, usually in a percolation process to remove the trace amounts of polar compounds and impurities present. It consists of hydrocarbons having carbon numbers predominantly in the range of C₄ through C₁₁ and boiling in the range of approximately - 20 °C to 220 °C.)</p>	649-368-00-X	271-262-3	68527-21-9	P
<p>Naphtha (petroleum), clay-treated light straight-run; Low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons resulting from treatment of light straight-run naphtha with a natural or modified clay, usually in a percolation process to remove the trace amounts of polar compounds and impurities, present. It consists of hydro-carbons having carbon numbers predominantly in the range of C₇ through C₁₀ and boiling in the range of approximately 93 °C to 180 °C.)</p>	649-369-00-5	271-263-9	68527-22-0	P
<p>Naphtha (petroleum), light steam-cracked arom.; Low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons produced by distillation of products from a steam-cracking process. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₇ through C₉, and boiling in the range of approximately 110 °C to 165 °C.)</p>	649-370-00-0	271-264-4	68527-23-1	P
<p>Naphtha (petroleum), light steam-cracked, debenzenised; Low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons produced by distillation of products from a steam-cracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₄ through C₁₂ and boiling in the range of approximately 80 °C to 218 °C.)</p>	649-371-00-6	271-266-5	68527-26-4	P
<p>Naphtha (petroleum), aromatic-containing; Low boiling point naphtha — unspecified</p>	649-372-00-1	271-635-0	68603-08-7	P
<p>Gasoline, pyrolysis, debutaniser bottoms; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained from the fractionation of depropaniser bottoms. It consists of hydrocarbons having carbon numbers predominantly greater than C₅.)</p>	649-373-00-7	271-726-5	68606-10-0	P
<p>Naphtha (petroleum), light, sweetened; Low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by subjecting a petroleum distillate to a sweetening process to convert mercaptans or to remove acidic impurities. It consists predominantly of saturated and unsaturated hydrocarbons having carbon numbers predominantly in the range of C₃ through C₆ and boiling in the range of approximately - 20 °C to 100 °C.)</p>	649-374-00-2	272-206-0	68783-66-4	P
<p>Natural gas condensates; Low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons separated and/or condensed from natural gas during transportation and collected at the wellhead and/or from the production, gathering, transmission, and distribution pipelines in deeps, scrubbers, etc. It consists predominantly of hydro-carbons having carbon numbers predominantly in the range of C₂ through C₈.)</p>	649-375-00-8	272-896-3	68919-39-1	J

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), naphtha unfiner stripper; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons produced by stripping the products from the naphtha unfiner. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-376-00-3	272-932-8	68921-09-5	P
Naphtha (petroleum), catalytic reformed light, aromatic-free fraction; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons remaining after removal of aromatic compounds from catalytic reformed light naphtha in a selective absorption process. It consists predominantly of paraffinic and cyclic compounds having carbon numbers predominantly in the range of C ₅ to C ₈ and boiling in the range of approximately 66 °C to 121 °C.)	649-377-00-9	285-510-3	85116-59-2	P
Gasoline; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons consisting primarily of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons having carbon numbers predominantly greater than C ₃ and boiling in the range of 30 °C to 260 °C.)	649-378-00-4	289-220-8	86290-81-5	P
Aromatic hydrocarbons, C _{7,8} , dealkylation products, distillation residues; Low boiling point naphtha — unspecified	649-379-00-X	292-698-0	90989-42-7	P
Hydrocarbons, C _{4,6} , depentaniser lights, arom. hydrotreater; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained as first runnings from the depentaniser column before hydrotreatment of the aromatic charges. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₄ through C ₆ , predominantly pentanes and pentenes, and boiling in the range of approximately 25 °C to 40 °C.)	649-380-00-5	295-298-4	91995-38-9	P
Distillates (petroleum), heat-soaked steam-cracked naphtha, C ₅ -rich; Low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained by distillation of heat-soaked steam-cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₄ through C ₆ , predominantly C ₅ .)	649-381-00-0	295-302-4	91995-41-4	P
Extracts (petroleum), catalytic reformed light naphtha solvent; low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained as the extract from the solvent extraction of a catalytically reformed petroleum cut. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₇ through C ₈ and boiling in the range of approximately 100 °C to 200 °C.)	649-382-00-6	295-331-2	91995-68-5	P
Naphtha (petroleum), hydrodesulphurised light, dearomatised; low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained by distillation of hydrodesulphurised and dearomatised light petroleum fractions. It consists predominantly of C ₇ paraffins and cycloparaffins boiling in a range of approximately 90 °C to 100 °C.)	649-383-00-1	295-434-2	92045-53-9	P

Substances	Index No	EC No	CAS No	Notes
<p>Naphtha (petroleum), light, C₅-rich, sweetened; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by subjecting a petroleum naphtha to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C₄ through C₅, predominantly C₅, and boiling in the range of approximately - 10 °C to 35 °C.)</p>	649-384-00-7	295-442-6	92045-60-8	P
<p>Hydrocarbons, C₈₋₁₁, naphtha-cracking, toluene cut; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by distillation from prehydrogenated cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₈ through C₁₁ and boiling in the range of approximately 130 °C to 205 °C.)</p>	649-385-00-2	295-444-7	92045-62-0	P
<p>Hydrocarbons, C₄₋₁₁, naphtha-cracking; aromatic-free; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained from prehydrogenated cracked naphtha after distillative separation of benzene- and toluene-containing hydrocarbon cuts and a higher boiling fraction. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₄ through C₁₁ and boiling in the range of approximately 30 °C to 205 °C.)</p>	649-386-00-8	295-445-2	92045-63-1	P
<p>Naphtha (petroleum), light heat-soaked, steam-cracked; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by the fractionation of steam cracked naphtha after recovery from a heat soaking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₄ through C₆ and boiling in the range of approximately 0 °C to 80 °C.)</p>	649-387-00-3	296-028-8	92201-97-3	P
<p>Distillates (petroleum), C₆-rich; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained from the distillation of a petroleum feedstock. It consists predominantly of hydrocarbons having carbon numbers of C₅ through C₇, rich in C₆, and boiling in the range of approximately 60 °C to 70 °C.)</p>	649-388-00-9	296-903-4	93165-19-6	P
<p>Gasoline, pyrolysis, hydrogenated; low boiling point naphtha — unspecified</p> <p>(A distillation fraction from the hydrogenation of pyrolysis gasoline boiling in the range of approximately 20 °C to 200 °C.)</p>	649-389-00-4	302-639-3	94114-03-1	P
<p>Distillates (petroleum), steam-cracked, C₈₋₁₂ fraction, polymd., distillation lights; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by distillation of the polymerised C₈ through C₁₂ fraction from steam-cracked petroleum distillates. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₈ through C₁₂.)</p>	649-390-00-X	305-750-5	95009-23-7	P

Substances	Index No	EC No	CAS No	Notes
<p>Extracts (petroleum); heavy naphtha solvent, clay-treated; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by the treatment of heavy naphthic solvent petroleum extract with bleaching earth. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₆ through C₁₀, and boiling in the range of approximately 80 °C to 180 °C.)</p>	649-391-00-5	308-261-5	97926-43-7	P
<p>Naphtha (petroleum), light steam-cracked, debenzenised, thermally treated; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by the treatment and distillation of debenzenised light steam-cracked petroleum naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₇ through C₁₂ and boiling in the range of approximately 95 °C to 200 °C.)</p>	649-392-00-0	308-713-1	98219-46-6	P
<p>Naphtha (petroleum), light steam-cracked, thermally treated; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by the treatment and distillation of light steam-cracked petroleum naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₅ through C₆ and boiling in the range of approximately 35 °C to 80 °C.)</p>	649-393-00-6	308-714-7	98219-47-7	P
<p>Distillates (petroleum), C₇₋₉, C₈-rich, hydrodesulphurised dearomatised; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by the distillation of petroleum light fraction, hydrodesulphurised and dearomatised. It consists predominantly of hydrocarbons having carbon numbers in the range of C₇ through C₉, predominantly C₈ paraffins and cycloparaffins, boiling in the range of approximately 120 °C to 130 °C.)</p>	649-394-00-1	309-862-5	101316-56-7	P
<p>Hydrocarbons, C₆₋₈, hydrogenated sorption-dearomatised, toluene raffination; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained during the sorption of toluene from a hydrocarbon fraction from cracked gasoline treated with hydrogen in the presence of a catalyst. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₆ through C₈ and boiling in the range of approximately 80 °C to 135 °C.)</p>	649-395-00-7	309-870-9	101316-66-9	P
<p>Naphtha (petroleum), hydrodesulphurised full-range coker; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by fractionation from hydrodesulphurised coker distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₅ to C₁₁ and boiling in the range of approximately 23 °C to 196 °C.)</p>	649-396-00-2	309-879-8	101316-76-1	P
<p>Naphtha (petroleum), sweetened light; low boiling point naphtha — unspecified</p> <p>(A complex combination of hydrocarbons obtained by subjecting a petroleum naphtha to a sweetening process to convert mercaptans or to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₅ through C₈ and boiling in the range of approximately 20 °C to 130 °C.)</p>	649-397-00-8	309-976-5	101795-01-1	P

Substances	Index No	EC No	CAS No	Notes
Hydrocarbons, C ₃₋₆ , C ₅ -rich, steam-cracked naphtha; low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained by distillation of steam-cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₃ through C ₆ , predominantly C ₅ .)	649-398-00-3	310-012-0	102110-14-5	P
Hydrocarbons, C ₅ -rich, dicyclopentadiene-containing; low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained by distillation of the products from a steam-cracking process. It consists predominantly of hydrocarbons having carbon numbers of C ₅ and dicyclopentadiene and boiling in the range of approximately 30 °C to 170 °C.)	649-399-00-9	310-013-6	102110-15-6	P
Residues (petroleum), steam-cracked light, aromatic; low boiling point naphtha — unspecified (A complex combination of hydrocarbons obtained by the distillation of the products of steam cracking or similar processes after taking off the very light products resulting in a residue starting with hydrocarbons having carbon numbers greater than C ₅ . It consists predominantly of aromatic hydrocarbons having carbon numbers greater than C ₅ and boiling above approximately 40 °C.)	649-400-00-2	310-057-6	102110-55-4	P
Hydrocarbons, C ₅₋₆ , C ₅₋₆ -rich; low boiling point naphtha — unspecified	649-401-00-8	270-690-8	68476-50-6	P
Hydrocarbons, C ₅ -rich; low boiling point naphtha — unspecified	649-402-00-3	270-695-5	68476-55-1	P
Aromatic hydrocarbons, C ₈₋₁₀ ; Light oil redistillate, high boiling	649-403-00-9	292-695-4	90989-39-2	P
Distillates (petroleum), light catalytic cracked; Cracked gas oil (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₉ through C ₂₅ and boiling in the range of approximately 150 °C to 400 °C. It contains a relatively large proportion of bicyclic aromatic hydrocarbons.)	649-435-00-3	265-060-4	64741-59-9	
Distillates (petroleum), intermediate catalytic cracked; Cracked gas oil (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ through C ₃₀ and boiling in the range of approximately 205 °C to 450 °C. It contains a relatively large proportion of tricyclic aromatic hydrocarbons.)	649-436-00-9	265-062-5	64741-60-2	
Distillates (petroleum), light thermal cracked; Cracked gas oil (A complex combination of hydrocarbons from the distillation of the products from a thermal cracking process. It consists predominantly of unsaturated hydrocarbons having carbon numbers predominantly in the range of C ₁₀ through C ₂₂ and boiling in the range of approximately 160 °C to 370 °C.)	649-438-00-X	265-084-5	64741-82-8	

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), hydrodesulphurised light catalytic cracked; Cracked gas oil (A complex combination of hydrocarbons obtained by treating light catalytic cracked distillates with hydrogen to convert organic sulphur to hydrogen sulphide which is removed. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₉ through C ₂₅ and boiling in the range of approximately 150 °C to 400 °C. It contains a relatively large proportion of bicyclic aromatic hydrocarbons.)	649-439-00-5	269-781-5	68333-25-5	
Distillates (petroleum), light steam-cracked naphtha; Cracked gas oil (A complex combination of hydrocarbons from the multiple distillation of products from a steam cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₀ through C ₁₈ .)	649-440-00-0	270-662-5	68475-80-9	
Distillates (petroleum), cracked steam-cracked petroleum distillates; Cracked gas oil (A complex combination of hydrocarbons produced by distilling cracked steam cracked distillate and/or its fractionation products. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₀ to low molecular weight polymers.)	649-441-00-6	270-727-8	68477-38-3	
Gas oils (petroleum), steam-cracked; Cracked gas oil (A complex combination of hydrocarbons produced by distillation of the products from a steam cracking process. It consists of hydrocarbons having carbon numbers predominantly greater than C ₉ and boiling in the range of from approximately 205 °C to 400 °C.)	649-442-00-1	271-260-2	68527-18-4	
Distillates (petroleum), hydrodesulphurised thermal cracked middle; Cracked gas oil (A complex combination of hydrocarbons obtained by fractionation from hydrodesulphurised thermal cracker distillate stocks. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₁ to C ₂₅ and boiling in the range of from approximately 205 °C to 400 °C.)	649-443-00-7	285-505-6	85116-53-6	
Gas oils (petroleum), thermal-cracked, hydrodesulphurised; Cracked gas oil	649-444-00-2	295-411-7	92045-29-9	
Residues (petroleum), hydrogenated steam-cracked naphtha; Cracked gas oil (A complex combination of hydrocarbons obtained as a residual fraction from the distillation of hydrotreated steam-cracked naphtha. It consists predominantly of hydrocarbons boiling in the range of approximately 200 °C to 350 °C.)	649-445-00-8	295-514-7	92062-00-5	
Residues (petroleum), steam-cracked naphtha distillation; Cracked gas oil (A complex combination of hydrocarbons obtained as a column bottom from the separation of effluents from steam cracking naphtha at a high temperature. It boils in the range of approximately 147 °C to 300 °C and produces a finished oil having a viscosity of 18 10 ⁻⁶ m ² .s ⁻¹ at 50 °C.)	649-446-00-3	295-517-3	92062-04-9	

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), light catalytic cracked, thermally degraded; Cracked gas oil (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process which has been used as a heat transfer fluid. It consists predominantly of hydrocarbons boiling in the range of approximately 190 °C to 340 °C. This steam is likely to contain organic sulphur compounds.)	649-447-00-9	295-991-1	92201-60-0	
Residues (petroleum), steam-cracked, heat-soaked naphtha; Cracked gas oil (A complex combination of hydrocarbons obtained as residue from the distillation of steam-cracked heat-soaked naphtha and boiling in the range of approximately 150 °C to 350 °C.)	649-448-00-4	297-905-8	93763-85-0	
Gas oils (petroleum), light vacuum, thermal-cracked hydrodesulphurised; Cracked gas oil (A complex combination of hydrocarbons obtained by catalytic dehydrodesulphurisation of thermal-cracked light vacuum petroleum. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₄ through C ₂₀ and boiling in the range of approximately 270 °C to 370 °C.)	649-450-00-5	308-278-8	97926-59-5	
Distillates (petroleum), hydrodesulphurised middle coker; Cracked gas oil (A complex combination of hydrocarbons by fractionation from hydrodesulphurised coker distillate stocks. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₂ through C ₂₁ and boiling in the range of approximately 200 °C to 360 °C.)	649-451-00-0	309-865-1	101316-59-0	
Distillates (petroleum), heavy steam-cracked; Cracked gas oil (A complex combination of hydrocarbons obtained by distillation of steam cracking heavy residues. It consists predominantly of highly alkylated heavy aromatic hydrocarbons boiling in the range of approximately 250 °C to 400 °C.)	649-452-00-6	309-939-3	101631-14-5	
Distillates (petroleum), heavy hydrocracked; Base oil — unspecified (A complex combination of hydrocarbons from the distillation of the products from a hydrocracking process. It consists predominantly of saturated hydrocarbons having carbon numbers in the range of C ₁₅ through C ₃₉ and boiling in the range of approximately 260 °C to 600 °C.)	649-453-00-1	265-077-7	64741-76-0	L
Distillates (petroleum), solvent-refined heavy paraffinic; Base oil — unspecified (A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil with a viscosity of at least 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-454-00-7	265-090-8	64741-88-4	L
Distillates (petroleum), solvent-refined light paraffinic; Base oil — unspecified (A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ and produces a finished oil having a viscosity of less than 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-455-00-2	265-091-3	64741-89-5	L

Substances	Index No	EC No	CAS No	Notes
Residual oils (petroleum), solvent deasphalted; Base oil — unspecified (A complex combination of hydrocarbons obtained as the solvent soluble fraction from C ₃ -C ₄ solvent deasphalting of a residuum. It consists of hydrocarbons having carbon numbers predominantly higher than C ₂₅ and boiling above approximately 400 °C.)	649-456-00-8	265-096-0	64741-95-3	L
Distillates (petroleum), solvent-refined heavy naphthenic; Base oil — unspecified (A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil with a viscosity of at least 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains relatively few normal paraffins.)	649-457-00-3	265-097-6	64741-96-4	L
Distillates (petroleum), solvent-refined light naphthenic; Base oil — unspecified (A complex combination of hydrocarbons obtained as the raffinate from a solvent extraction process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ and produces a finished oil with a viscosity of less than 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains relatively few normal paraffins.)	649-458-00-9	265-098-1	64741-97-5	L
Residual oils (petroleum), solvent-refined; Base oil — unspecified (A complex combination of hydrocarbons obtained as the solvent insoluble fraction from solvent refining of a residuum using a polar organic solvent such as phenol or furfural. It consists of hydrocarbons having carbon numbers predominantly greater than C ₂₅ and boiling above approximately 400 °C.)	649-459-00-4	265-101-6	64742-01-4	L
Distillates (petroleum), clay-treated paraffinic; Base oil — unspecified (A complex combination of hydrocarbons resulting from treatment of a petroleum fraction with natural or modified clay in either a contacting or percolation process to remove the trace amounts of polar compounds and impurities present. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil with a viscosity of at least 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains a relatively large proportion of saturated hydrocarbons.)	649-460-00-X	265-137-2	64742-36-5	L
Distillates (petroleum), clay-treated light paraffinic; Base oil — unspecified (A complex combination of hydrocarbons resulting from treatment of a petroleum fraction with natural or modified clay in either a contacting or percolation process to remove the trace amounts of polar compounds and impurities present. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ and produces a finished oil with a viscosity of less than 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains a relatively large proportion of saturated hydrocarbons.)	649-461-00-5	265-138-8	64742-37-6	L

Substances	Index No	EC No	CAS No	Notes
<p>Residual oils (petroleum), clay-treated; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by the treatment of a residual oil with a natural or modified clay in either a contacting or percolation process to remove the trace amounts of polar compounds and impurities present. It consists of hydrocarbons having carbon numbers predominantly greater than C₂₅ and boiling above approximately 400 °C.)</p>	649-462-00-0	265-143-5	64742-41-2	L
<p>Distillates (petroleum), clay-treated heavy naphthenic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons resulting from treatment of a petroleum fraction with a natural or modified clay in either a contacting or percolation process to remove the trace amounts of polar compounds and impurities present. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀ and produces a finished oil with a viscosity of at least 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-463-00-6	265-146-1	64742-44-5	L
<p>Distillates (petroleum), clay-treated light naphthenic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons resulting from treatment of a petroleum fraction with natural or modified clay in either a contacting or percolation process to remove the trace amounts of polar compounds and impurities present. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀ and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-464-00-1	265-147-7	64742-45-6	L
<p>Distillates (petroleum), hydrotreated heavy naphthenic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀ and produces a finished oil with a viscosity of at least 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-465-00-7	265-155-0	64742-52-5	L
<p>Distillates (petroleum), hydrotreated light naphthenic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀ and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-466-00-2	265-156-6	64742-53-6	L
<p>Distillates (petroleum), hydrotreated heavy paraffinic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀ and produces a finished oil of at least 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains a relatively large proportion of saturated hydrocarbons.)</p>	649-467-00-8	265-157-1	64742-54-7	L

Substances	Index No	EC No	CAS No	Notes
<p>Distillates (petroleum), hydrotreated light paraffinic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀ and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains a relatively large proportion of saturated hydrocarbons.)</p>	649-468-00-3	265-158-7	64742-55-8	L
<p>Distillates (petroleum), solvent-dewaxed light paraffinic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by removal of normal paraffins from a petroleum fraction by solvent crystallisation. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀ and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C.)</p>	649-469-00-9	265-159-2	64742-56-9	L
<p>Residual oils (petroleum), hydrotreated; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly greater than C₂₅ and boiling above approximately 400 °C.)</p>	649-470-00-4	265-160-8	64742-57-0	L
<p>Residual oils (petroleum), solvent-dewaxed; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by removal of long, branched chain hydrocarbons from a residual oil by solvent crystallisation. It consists of hydrocarbons having carbon numbers predominantly greater than C₂₅ and boiling above approximately 400 °C.)</p>	649-471-00-X	265-166-0	64742-62-7	L
<p>Distillates (petroleum), solvent-dewaxed heavy naphthenic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by removal of normal paraffins from a petroleum fraction by solvent crystallisation. It consists of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀ and produces a finished oil of not less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-472-00-5	265-167-6	64742-63-8	L
<p>Distillates (petroleum), solvent-dewaxed light naphthenic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by removal of normal paraffins from a petroleum fraction by solvent crystallisation. It consists of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀ and produces a finished oil with a viscosity of less than 19 10⁻⁶ m².s⁻¹ at 40 °C. It contains relatively few normal paraffins.)</p>	649-473-00-0	265-168-1	64742-64-9	L
<p>Distillates (petroleum), solvent-dewaxed heavy paraffinic; Base oil — unspecified</p> <p>(A complex combination of hydrocarbons obtained by removal of normal paraffins from a petroleum fraction by solvent crystallisation. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀ and produces a finished oil with a viscosity of not less than 19 10⁻⁶ m².s⁻¹ at 40 °C.)</p>	649-474-00-6	265-169-7	64742-65-0	L

Substances	Index No	EC No	CAS No	Notes
Naphthenic oils (petroleum), catalytic dewaxed heavy; Base oil — unspecified (A complex combination of hydrocarbons obtained from a catalytic dewaxing process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil with a viscosity of at least 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains relatively few normal paraffins.)	649-475-00-1	265-172-3	64742-68-3	L
Naphthenic oils (petroleum), catalytic dewaxed light; Base oil — unspecified (A complex combination of hydrocarbons obtained from a catalytic dewaxing process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ and produces a finished oil with a viscosity of less than 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains relatively few normal paraffins.)	649-476-00-7	265-173-9	64742-69-4	L
Paraffin oils (petroleum), catalytic dewaxed heavy; Base oil — unspecified (A complex combination of hydrocarbons obtained from a catalytic dewaxing process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil with a viscosity of at least 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-477-00-2	265-174-4	64742-70-7	L
Paraffin oils (petroleum), catalytic dewaxed light; Base oil — unspecified (A complex combination of hydrocarbons obtained from a catalytic dewaxing process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ and produces a finished oil with a viscosity of less than 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-478-00-8	265-176-5	64742-71-8	L
Naphthenic oils (petroleum), complex dewaxed heavy; Base oil — unspecified (A complex combination of hydrocarbons obtained by removing straight chain paraffin hydrocarbons as a solid by treatment with an agent such as urea. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil with a viscosity of at least 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains relatively few normal paraffins.)	649-479-00-3	265-179-1	64742-75-2	L
Naphthenic oils (petroleum), complex dewaxed light; Base oil — unspecified (A complex combination of hydrocarbons obtained from a catalytic dewaxing process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ and produces a finished oil having a viscosity less than 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains relatively few normal paraffins.)	649-480-00-9	265-180-7	64742-76-3	L
Lubricating oils (petroleum), C ₂₀₋₅₀ , hydrotreated neutral oil-based high-viscosity; Base oil — unspecified (A complex combination of hydrocarbons obtained by treating light vacuum gas oil, heavy vacuum gas oil, and solvent deasphalted residual oil with hydrogen in the presence of a catalyst in a two stage process with dewaxing being carried out between the two stages. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil having a viscosity of approximately 112 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains a relatively large proportion of saturated hydrocarbons.)	649-481-00-4	276-736-3	72623-85-9	L

Substances	Index No	EC No	CAS No	Notes
Lubricating oils (petroleum), C ₁₅₋₃₀ , hydrotreated neutral oil-based; Base oil — unspecified (A complex combination of hydrocarbons obtained by treating light vacuum gas oil and heavy vacuum gas oil with hydrogen in the presence of a catalyst in a two stage process with dewaxing being carried out between the two stages. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ and produces a finished oil having a viscosity of approximately 15 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains a relatively large proportion of saturated hydrocarbons.)	649-482-00-X	276-737-9	72623-86-0	L
Lubricating oils (petroleum), C ₂₀₋₅₀ , hydrotreated neutral oil-based; Base oil — unspecified (A complex combination of hydrocarbons obtained by treating light vacuum gas oil, heavy vacuum gas oil and solvent deasphalted residual oil with hydrogen in the presence of a catalyst in a two stage process with dewaxing being carried out between the two stages. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil with a viscosity of approximately 32 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains a relatively large proportion of saturated hydrocarbons.)	649-483-00-5	276-738-4	72623-87-1	L
Lubricating oils; Base oil — unspecified (A complex combination of hydrocarbons obtained from solvent extraction and dewaxing processes. It consists predominantly of saturated hydrocarbons having carbon numbers in the range of C ₁₅ through C ₅₀ .)	649-484-00-0	278-012-2	74869-22-0	L
Distillates (petroleum), complex dewaxed heavy paraffinic; Base oil — unspecified (A complex combination of hydrocarbons obtained by dewaxing heavy paraffinic distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil with a viscosity of equal to or greater than 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains relatively few normal paraffins.)	649-485-00-6	292-613-7	90640-91-8	L
Distillates (petroleum), complex dewaxed light paraffinic; Base oil — unspecified (A complex combination of hydrocarbons obtained by dewaxing light paraffinic distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₂ through C ₃₀ and produces a finished oil with a viscosity of less than 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It contains relatively few normal paraffins.)	649-486-00-1	292-614-2	90640-92-9	L
Distillates (petroleum), solvent-dewaxed heavy paraffinic, clay-treated; Base oil — unspecified (A complex combination of hydrocarbons obtained by treating dewaxed heavy paraffinic distillate with neutral or modified clay in either a contacting or percolation process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ .)	649-487-00-7	292-616-3	90640-94-1	L
Hydrocarbons, C ₂₀₋₅₀ , solvent-dewaxed heavy paraffinic, hydrotreated; Base oil — unspecified (A complex combination of hydrocarbons produced by treating dewaxed heavy paraffinic distillate with hydrogen in the presence of a catalyst. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ .)	649-488-00-2	292-617-9	90640-95-2	L

Substances	Index No	EC No	CAS No	Notes
Distillates (petroleum), solvent dewaxed light paraffinic, clay-treated; Base oil — unspecified (A complex combination of hydrocarbons resulting from treatment of dewaxed light paraffinic distillate with natural or modified clay in either a contacting or percolation process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ .)	649-489-00-8	292-618-4	90640-96-3	L
Distillates (petroleum), solvent dewaxed light paraffinic, hydrotreated; Base oil — unspecified (A complex combination of hydrocarbons produced by treating a dewaxed light paraffinic distillate with hydrogen in the presence of a catalyst. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ .)	649-490-00-3	292-620-5	90640-97-4	L
Residual oils (petroleum), hydrotreated solvent dewaxed; Base oil — unspecified	649-491-00-9	292-656-1	90669-74-2	L
Residual oils (petroleum), catalytic dewaxed; Base oil — unspecified	649-492-00-4	294-843-3	91770-57-9	L
Distillates (petroleum), dewaxed heavy paraffinic, hydrotreated; Base oil — unspecified (A complex combination of hydrocarbons obtained from an intensive treatment of dewaxed distillate by hydrogenation in the presence of a catalyst. It consists predominantly of saturated hydrocarbons having carbon numbers in the range of C ₂₅ through C ₃₉ and produces a finished oil with a viscosity of approximately 44 10 ⁻⁶ m ² .s ⁻¹ at 50 °C.)	649-493-00-X	295-300-3	91995-39-0	L
Distillates (petroleum), dewaxed light paraffinic, hydrotreated; Base oil — unspecified (A complex combination of hydrocarbons obtained from an intensive treatment of dewaxed distillate by hydrogenation in the presence of a catalyst. It consists predominantly of saturated hydrocarbons having carbon numbers in the range of C ₂₁ through C ₂₉ and produces a finished oil with a viscosity of approximately 13 10 ⁻⁶ m ² .s ⁻¹ at 50 °C.)	649-494-00-5	295-301-9	91995-40-3	L
Distillates (petroleum), hydrocracked solvent-refined, dewaxed; Base oil — unspecified (A complex combination of liquid hydrocarbons obtained by recrystallisation of dewaxed hydrocracked solvent-refined petroleum distillates.)	649-495-00-0	295-306-6	91995-45-8	L
Distillates (petroleum), solvent-refined light naphthenic, hydrotreated; Base oil — unspecified (A complex combination of hydrocarbons obtained by treating a petroleum fraction with hydrogen in the presence of a catalyst and removing the aromatic hydrocarbons by solvent extraction. It consists predominantly of naphthenic hydrocarbons having carbon numbers predominantly in the range of C ₁₅ through C ₃₀ and produces a finished oil with a viscosity of between 13-15 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-496-00-6	295-316-0	91995-54-9	L
Lubricating oils (petroleum) C ₁₇₋₃₅ , solvent-extd., dewaxed, hydrotreated; Base oil — unspecified	649-497-00-1	295-423-2	92045-42-6	L

Substances	Index No	EC No	CAS No	Notes
Lubricating oils (petroleum), hydrocracked nonarom. solvent-deparaffined; Base oil — unspecified	649-498-00-7	295-424-8	92045-43-7	L
Residual oils (petroleum), hydrocracked acid-treated solvent-dewaxed; Base oil — unspecified (A complex combination of hydrocarbons produced by solvent removal of paraffins from the residue of the distillation of acid-treated, hydrocracked heavy paraffins and boiling approximately above 380 °C.)	649-499-00-2	295-499-7	92061-86-4	L
Paraffin oils (petroleum), solvent-refined dewaxed heavy; Base oil — unspecified (A complex combination of hydrocarbons obtained from sulphur-containing paraffinic crude oil. It consists predominantly of a solvent refined deparaffinated lubricating oil with a viscosity of 65 10 ⁻⁶ m ² .s ⁻¹ at 50 °C.)	649-500-00-6	295-810-6	92129-09-4	L
Lubricating oils (petroleum), base oils, paraffinic; Base oil — unspecified (A complex combination of hydrocarbons obtained by refining crude oil. It consists predominantly of aromatics, naphthenics and paraffinics and produces a finished oil with a viscosity of 23 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-501-00-1	297-474-6	93572-43-1	L
Hydrocarbons, hydrocracked paraffinic distillation residues, solvent-dewaxed; Base oil — unspecified	649-502-00-7	297-857-8	93763-38-3	L
Hydrocarbons, C ₂₀₋₅₀ , residual oil hydrogenation vacuum distillate; Base oil — unspecified	649-503-00-2	300-257-1	93924-61-9	L
Distillates (petroleum), solvent-refined hydrotreated heavy; hydrogenated; Base oil — unspecified	649-504-00-8	305-588-5	94733-08-1	L
Distillates (petroleum), solvent-refined hydrocracked light; Base oil — unspecified (A complex combination of hydrocarbons obtained by solvent dearomatization of the residue of hydrocracked petroleum. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₈ through C ₂₇ and boiling in the range of approximately 370 °C to 450 °C.)	649-505-00-3	305-589-0	94733-09-2	L
Lubricating oils (petroleum), C ₁₈₋₄₀ , solvent-dewaxed hydrocracked distillate-based; Base oil — unspecified (A complex combination of hydrocarbons obtained by solvent deparaffination of the distillation residue from hydrocracked petroleum. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₈ through C ₄₀ and boiling in the range of approximately 370 °C to 550 °C.)	649-506-00-9	305-594-8	94733-15-0	L
Lubricating oils (petroleum), C ₁₈₋₄₀ , solvent-dewaxed hydrogenated raffinate-based; Base oil — unspecified (A complex combination of hydrocarbons obtained by solvent deparaffination of the hydrogenated raffinate obtained by solvent extraction of a hydrotreated petroleum distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₈ through C ₄₀ and boiling in the range of approximately 370 °C to 550 °C.)	649-507-00-4	305-595-3	94733-16-1	L

Substances	Index No	EC No	CAS No	Notes
Hydrocarbons, C ₁₃₋₃₀ , aromatic-rich, solvent-extracted naphthenic distillate; Base oil — unspecified	649-508-00-X	305-971-7	95371-04-3	L
Hydrocarbons, C ₁₆₋₃₂ , arom.-rich, solvent-extracted naphthenic distillate; Base oil — unspecified	649-509-00-5	305-972-2	95371-05-4	L
Hydrocarbons, C ₃₇₋₆₈ , dewaxed deasphalted hydrotreated vacuum distillation residues; Base oil — unspecified	649-510-00-0	305-974-3	95371-07-6	L
Hydrocarbons, C ₃₇₋₆₅ , hydrotreated deasphalted vacuum distillation residues; Base oil — unspecified	649-511-00-6	305-975-9	95371-08-7	L
Distillates (petroleum), hydrocracked solvent-refined light; Base oil — unspecified (A complex combination of hydrocarbons obtained by the solvent treatment of a distillate from hydrocracked petroleum distillates. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₈ through C ₂₇ and boiling in the range of approximately 370 °C to 450 °C.)	649-512-00-1	307-010-7	97488-73-8	L
Distillates (petroleum), solvent-refined hydrogenated heavy; Base oil — unspecified (A complex combination of hydrocarbons obtained by the treatment of a hydrogenated petroleum distillate with a solvent. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₉ through C ₄₀ and boiling in the range of approximately 390 °C to 550 °C.)	649-513-00-7	307-011-2	97488-74-9	L
Lubricating oils (petroleum) C ₁₈₋₂₇ , hydrocracked solvent-dewaxed; Base oil — unspecified	649-514-00-2	307-034-8	97488-95-4	L
Hydrocarbons, C ₁₇₋₃₀ , hydrotreated solvent-deasphalted atmospheric distillation residue, distillation lights; Base oil — unspecified (A complex combination of hydrocarbons obtained as first runnings from the vacuum distillation of effluents from the treatment of a solvent deasphalted short residue with hydrogen in the presence of a catalyst. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₇ through C ₃₀ and boiling in the range of approximately 300 °C to 400 °C. It produces a finished oil having a viscosity of 4 10 ⁻⁶ m ² .s ⁻¹ at approximately 100 °C.)	649-515-00-8	307-661-7	97675-87-1	L
Hydrocarbons, C ₁₇₋₄₀ , hydrotreated solvent-deasphalted distillation residue, vacuum distillation lights; Base oil — unspecified (A complex combination of hydrocarbons obtained as first runnings from the vacuum distillation of effluents from the catalytic hydrotreatment of a solvent deasphalted short residue having a viscosity of 8 10 ⁻⁶ m ² .s ⁻¹ at approximately 100 °C. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₇ through C ₄₀ and boiling in the range of approximately 300 °C to 500 °C.)	649-516-00-3	307-755-8	97722-06-0	L

Substances	Index No	EC No	CAS No	Notes
Hydrocarbons, C ₁₃₋₂₇ , solvent-extracted light naphthenic; Base oil — unspecified (A complex combination of hydrocarbons obtained by extraction of the aromatics from a light naphthenic distillate having a viscosity of 9,5 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₃ through C ₂₇ and boiling in the range of approximately 240 °C to 400 °C.)	649-517-00-9	307-758-4	97722-09-3	L
Hydrocarbons, C ₁₄₋₂₉ , solvent-extracted light naphthenic; Base oil — unspecified (A complex combination of hydrocarbons obtained by extraction of the aromatics from a light naphthenic distillate having a viscosity of 16 10 ⁻⁶ m ² .s ⁻¹ at 40 °C. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₄ through C ₂₉ and boiling in the range of approximately 250 °C to 425 °C.)	649-518-00-4	307-760-5	97722-10-6	L
Hydrocarbons, C ₂₇₋₄₂ , dearomatised; Base oil — unspecified	649-519-00-X	308-131-8	97862-81-2	L
Hydrocarbons, C ₁₇₋₃₀ , hydrotreated distillates, distillation lights; Base oil — unspecified	649-520-00-5	308-132-3	97862-82-3	L
Hydrocarbons, C ₂₇₋₄₅ , naphthenic vacuum distillation; Base oil — unspecified	649-521-00-0	308-133-9	97862-83-4	L
Hydrocarbons, C ₂₇₋₄₅ , dearomatised; Base oil — unspecified	649-522-00-6	308-287-7	97926-68-6	L
Hydrocarbons, C ₂₀₋₅₈ , hydrotreated; Base oil — unspecified	649-523-00-1	308-289-8	97926-70-0	L
Hydrocarbons, C ₂₇₋₄₂ , naphthenic; Base oil — unspecified	649-524-00-7	308-290-3	97926-71-1	L
Residual oils (petroleum), carbon-treated solvent-dewaxed; Base oil — unspecified (A complex combination of hydrocarbons obtained by the treatment of solvent-dewaxed petroleum residual oils with activated charcoal for the removal of trace polar constituents and impurities.)	649-525-00-2	309-710-8	100684-37-5	L
Residual oils (petroleum), clay-treated solvent-dewaxed; Base oil — unspecified (A complex combination of hydrocarbons obtained by treatment of solvent-dewaxed petroleum residual oils with bleaching earth for the removal of trace polar constituents and impurities.)	649-526-00-8	309-711-3	100684-38-6	L
Lubricating oils (petroleum) C ₂₅ , solvent-extracted, deasphalted, dewaxed, hydrogenated; base oil — unspecified (A complex combination of hydrocarbons obtained by solvent extraction and hydrogenation of vacuum distillation residues. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of greater than C ₂₅ and produces a finished oil with a viscosity in the order of 32 10 ⁻⁶ m ² .s ⁻¹ to 37 10 ⁻⁶ m ² .s ⁻¹ at 100 °C.)	649-527-00-3	309-874-0	101316-69-2	L
Lubricating oils (petroleum) C ₁₇₋₃₂ , solvent-extracted, dewaxed, hydrogenated; Base oil — unspecified (A complex combination of hydrocarbons obtained by solvent extraction and hydrogenation of atmospheric distillation residues. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₇ through C ₃₂ and produces a finished oil with a viscosity in the order 17 10 ⁻⁶ m ² .s ⁻¹ to 23 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-528-00-9	309-875-6	101316-70-5	L

Substances	Index No	EC No	CAS No	Notes
Lubricating oils (petroleum) C ₂₀₋₃₅ , solvent-extracted, dewaxed, hydrogenated; Base oil — unspecified (A complex combination of hydrocarbons obtained by solvent extraction and hydrogenation of atmospheric distillation residues. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₃₅ and produces a finished oil with a viscosity in the order of 37 10 ⁻⁶ m ² .s ⁻¹ to 44 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-529-00-4	309-876-1	101316-71-6	L
Lubricating oils (petroleum) C ₂₄₋₅₀ , solvent-extracted, dewaxed, hydrogenated; Base oil — unspecified (A complex combination of hydrocarbons obtained by solvent extraction and hydrogenation of atmospheric distillation residues. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₄ through C ₅₀ and produces a finished oil with a viscosity in the order of 16 10 ⁻⁶ m ² .s ⁻¹ to 75 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-530-00-X	309-877-7	101316-72-7	L
Extracts (petroleum), heavy naphthenic distillate solvent, aromatic concentrate; Distillate aromatic extract (treated) (An aromatic concentrate produced by adding water to heavy naphthenic distillate solvent extract and extraction solvent.)	649-531-00-5	272-175-3	68783-00-6	L
Extracts (petroleum), solvent-refined heavy paraffinic distillate solvent; Distillate aromatic extract (treated) (A complex combination of hydrocarbons obtained as the extract from the re-extraction of solvent-refined heavy paraffinic distillate. It consists of saturated and aromatic hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ .)	649-532-00-0	272-180-0	68783-04-0	L
Extracts (petroleum), heavy paraffinic distillates, solvent-deasphalted; Distillate aromatic extract (treated) (A complex combination of hydrocarbons obtained as the extract from a solvent extraction of heavy paraffinic distillate.)	649-533-00-6	272-342-0	68814-89-1	L
Extracts (petroleum), heavy naphthenic distillate solvent, hydrotreated; Distillate aromatic extract (treated) (A complex combination of hydrocarbons obtained by treating a heavy naphthenic distillate solvent extract with hydrogen in the presence of a catalyst. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C ₂₀ through C ₅₀ and produces a finished oil of at least 19 10 ⁻⁶ m ² .s ⁻¹ at 40 °C.)	649-534-00-1	292-631-5	90641-07-9	L
Extracts (petroleum), heavy paraffinic distillate solvent, hydrotreated; Distillate aromatic extract (treated) (A complex combination of hydrocarbons produced by treating a heavy paraffinic distillate solvent extract with hydrogen in the presence of a catalyst. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₂₁ through C ₃₃ and boiling in the range of approximately 350 °C to 480 °C.)	649-535-00-7	292-632-0	90641-08-0	L
Extracts (petroleum), light paraffinic distillate solvent, hydrotreated; Distillate aromatic extract (treated) (A complex combination of hydrocarbons produced by treating a light paraffinic distillate solvent extract with hydrogen in the presence of a catalyst. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁₇ through C ₂₆ and boiling in the range of approximately 280 °C to 400 °C.)	649-536-00-2	292-633-6	90641-09-1	L

Substances	Index No	EC No	CAS No	Notes
<p>Extracts (petroleum), hydrotreated paraffinic light distillate solvent; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained as the extract from solvent extraction of intermediate paraffinic top solvent distillate that is treated with hydrogen in the presence of a catalyst. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₆ through C₃₆.)</p>	649-537-00-8	295-335-4	91995-73-2	L
<p>Extracts (petroleum), light naphthenic distillate solvent, hydrodesulphurised; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained by treating the extract, obtained from a solvent extraction process, with hydrogen in the presence of a catalyst under conditions primarily to remove sulphur compounds. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₃₀. This stream is likely to contain 5 % wt or more of four- to six-membered condensed ring aromatic hydrocarbons.)</p>	649-538-00-3	295-338-0	91995-75-4	L
<p>Extracts (petroleum), light paraffinic distillate solvent, acid-treated; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained as a fraction of the distillation of an extract from the solvent extraction of light paraffinic top petroleum distillates that is subjected to a sulphuric acid refining. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₆ through C₃₂.)</p>	649-539-00-9	295-339-6	91995-76-5	L
<p>Extracts (petroleum), light paraffinic distillate solvent, hydrodesulphurised; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained by solvent extraction of a light paraffin distillate and treated with hydrogen to convert the organic sulphur to hydrogen sulphide which is eliminated. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₄₀ and produces a finished oil having a viscosity of greater than 10⁻⁵ m².s⁻¹ at 40 °C.)</p>	649-540-00-4	295-340-1	91995-77-6	L
<p>Extracts (petroleum), light vacuum gas oil solvent, hydrotreated; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained by solvent extraction from light vacuum petroleum gas oils and treated with hydrogen in the presence of a catalyst. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₃ through C₃₀.)</p>	649-541-00-X	295-342-2	91995-79-8	L
<p>Extracts (petroleum), heavy paraffinic distillate solvent, clay-treated; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons resulting from treatment of a petroleum fraction with natural or modified clay in either a contact or percolation process to remove the trace amounts of polar compounds and impurities present. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀. This stream is likely to contain 5 % wt or more four- to six-membered ring aromatic hydrocarbons.)</p>	649-542-00-5	296-437-1	92704-08-0	L

Substances	Index No	EC No	CAS No	Notes
<p>Extracts (petroleum), heavy naphthenic distillate solvent, hydrodesulphurised; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained from a petroleum stock by treating with hydrogen to convert organic sulphur to hydrogen sulphide which is removed. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₅₀ and produces a finished oil with a viscosity of greater than 19 10⁻⁶ m².s⁻¹ at 40 °C.)</p>	649-543-00-0	297-827-4	93763-10-1	L
<p>Extracts (petroleum), solvent-dewaxed heavy paraffinic distillate solvent, hydrodesulphurised; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained from a solvent dewaxed petroleum stock by treating with hydrogen to convert organic sulphur to hydrogen sulphide which is removed. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C₁₅ through C₅₀ and produces a finished oil with a viscosity of greater than 19 10⁻⁶ m².s⁻¹ at 40 °C.)</p>	649-544-00-6	297-829-5	93763-11-2	L
<p>Extracts (petroleum), light paraffinic distillate solvent, carbon-treated; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained as a fraction from distillation of an extract recovered by solvent extraction of light paraffinic top petroleum distillate treated with activated charcoal to remove traces of polar constituents and impurities. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₆ through C₃₂.)</p>	649-545-00-1	309-672-2	100684-02-4	L
<p>Extracts (petroleum), light paraffinic distillate solvent, clay-treated; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained as a fraction from distillation of an extract recovered by solvent extraction of light paraffinic top petroleum distillates treated with bleaching earth to remove traces of polar constituents and impurities. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₆ through C₃₂.)</p>	649-546-00-7	309-673-8	100684-03-5	L
<p>Extracts (petroleum), light vacuum, gas oil solvent, carbon-treated; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained by solvent extraction of light vacuum petroleum gas oil treated with activated charcoal for the removal of trace polar constituents and impurities. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₃ through C₃₀.)</p>	649-547-00-2	309-674-3	100684-04-6	L
<p>Extracts (petroleum), light vacuum, gas oil solvent, clay-treated; Distillate aromatic extract (treated)</p> <p>(A complex combination of hydrocarbons obtained by solvent extraction of light vacuum petroleum gas oils treated with bleaching earth for removal of trace polar constituents and impurities. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C₁₃ through C₃₀.)</p>	649-548-00-8	309-675-9	100684-05-7	L
<p>Foots oil (petroleum); Foots oil</p> <p>(A complex combination of hydrocarbons obtained as the oil fraction from a solvent deoiling or a wax sweating process. It consists predominantly of branched chain hydrocarbons having carbon numbers predominantly in the range of C₂₀ through C₅₀.)</p>	649-549-00-3	265-171-8	64742-67-2	L

Substances	Index No	EC No	CAS No	Notes
Foots oil (petroleum), hydrotreated; Foots oil	649-550-00-9	295-394-6	92045-12-0	L
Refractory ceramic fibres; Special Purpose Fibres, with the exception of those specified elsewhere in Annex I to Directive 67/548/EEC; (Man-made vitreous (silicate) fibres with random orientation with alkaline oxide and alkali earth oxide ($\text{Na}_2\text{O} + \text{K}_2\text{O} + \text{CaO} + \text{MgO} + \text{BaO}$) content less or equal to 18 % by weight.)	650-017-00-8			R

Appendix 3

Point 29 — Mutagens: category 1

—

Appendix 4

Point 29 — Mutagens: category 2

Substances	Index No	EC No	CAS No	Notes
Hexamethylphosphoric triamide; hexamethylphosphoramide	015-106-00-2	211-653-8	680-31-9	
Diethyl sulphate	016-027-00-6	200-589-6	64-67-5	
Chromium (VI) trioxide	024-001-00-0	215-607-8	1333-82-0	E
Potassium dichromate	024-002-00-6	231-906-6	7778-50-9	E
Ammonium dichromate	024-003-00-1	232-143-1	7789-09-5	E
Sodium dichromate anhydrate	024-004-00-7	234-190-3	10588-01-9	E
Sodium dichromate, dihydrate	024-004-01-4	234-190-3	7789-12-0	E
Chromyl dichloride; chromic oxychloride	024-005-00-2	239-056-8	14977-61-8	
Potassium chromate	024-006-00-8	232-140-5	7789-00-6	
Sodium chromate	024-018-00-3	231-889-5	7775-11-3	E
Cadmium fluoride	048-006-00-2	232-222-0	7790-79-6	E
Cadmium chloride	048-008-00-3	233-296-7	10108-64-2	E
Cadmium sulphate	048-009-00-9	233-331-6	10124-36-4	E
Butane [containing $\geq 0,1$ % Butadiene (203-450-8)] [1]	601-004-01-8	203-448-7 [1]	106-97-8 [1]	C, S
Isobutane [containing $\geq 0,1$ % Butadiene (203-450-8)] [2]		20-857-2 [2]	75-28-5 [2]	
1,3-Butadiene buta-1,3-diene	601-013-00-X	203-450-8	106-99-0	D
Benzene	601-020-00-8	200-753-7	71-43-2	E
Benzo[a]pyrene; benzo[d,e,f]chrysene	601-032-00-3	200-028-5	50-32-8	
1,2-Dibromo-3-chloropropane	602-021-00-6	202-479-3	96-12-8	
Ethylene oxide; oxirane	603-023-00-X	200-849-9	75-21-8	
Propylene oxide; 1,2-epoxypropane; Methyloxirane	603-055-00-4	200-879-2	75-56-9	E
2,2'-Bioxirane; 1,2:3,4-diepoxybutane	603-060-00-1	215-979-1	1464-53-5	
Methyl acrylamidomethoxyacetate (containing $\geq 0,1$ % acrylamide)	607-190-00-X	401-890-7	77402-03-0	
Methyl acrylamidoglycolate (containing $\geq 0,1$ % acrylamide)	607-210-00-7	403-230-3	77402-05-2	
2-Nitrotoluene	609-065-00-5	201-853-3	88-72-2	E
4,4'-oxydianiline [1] and its salts p-aminophenyl ether [1]	612-199-00-7	202-977-0 [1]	101-80-4 [1]	E
Ethyleneimine; aziridine	613-001-00-1	205-793-9	151-56-4	

Substances	Index No	EC No	CAS No	Notes
Carbendazim (ISO) methyl benzimidazol-2-ylcarbamate	613-048-00-8	234-232-0	10605-21-7	
Benomyl (ISO) methyl 1-(butylcarbamoyl)benzimidazol-2-ylcarbamate	613-049-00-3	241-775-7	17804-35-2	
1,3,5-Tris(oxiranylmethyl)-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione; TGIC	615-021-00-6	219-514-3	2451-62-9	
Acrylamide	616-003-00-0	201-173-7	79-06-1	
1,3,5-tris-[(2S and 2R)-2,3-epoxypropyl]-1,3,5-triazine-2,4,6-(1H,3H,5H)-trione	616-091-00-0	423-400-0	59653-74-6	E
Gases (petroleum), catalytic cracked naphtha depropaniser overhead, C ₃ -rich acid-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked hydrocarbons and treated to remove acidic impurities. It consists of hydrocarbons having carbon numbers in the range of C ₂ through C ₄ , predominantly C ₃ .)	649-062-00-6	270-755-0	68477-73-6	H, K
Gases (petroleum), catalytic cracker; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of the products from a catalytic cracking process. It consists predominantly of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-063-00-1	270-756-6	68477-74-7	H, K
Gases (petroleum), catalytic cracker, C ₁₋₅ -rich; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a catalytic cracking process. It consists of aliphatic hydrocarbons having carbon numbers in the range of C ₁ through C ₆ , predominantly C ₁ through C ₅ .)	649-064-00-7	270-757-1	68477-75-8	H, K
Gases (petroleum), catalytic polymd. naphtha stabiliser overhead, C ₂₋₄ -rich; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of catalytic polymerised naphtha. It consists of aliphatic hydrocarbons having carbon numbers in the range of C ₂ through C ₆ , predominantly C ₂ through C ₄ .)	649-065-00-2	270-758-7	68477-76-9	H, K
Gases (petroleum), catalytic reformer, C ₁₋₄ -rich; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from a catalytic reforming process. It consists of hydrocarbons having carbon numbers in the range of C ₁ through C ₆ , predominantly C ₁ through C ₄ .)	649-066-00-8	270-760-8	68477-79-2	H, K
Gases (petroleum), C _{3,5} olefinic-paraffinic alkylation feed; Petroleum gas (A complex combination of olefinic and paraffinic hydrocarbons having carbon numbers in the range of C ₃ through C ₅ which are used as alkylation feed. Ambient temperatures normally exceed the critical temperature of these combinations.)	649-067-00-3	270-765-5	68477-83-8	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), C ₄ -rich; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from a catalytic fractionation process. It consists of aliphatic hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₄ .)	649-068-00-9	270-767-6	68477-85-0	H, K
Gases (petroleum), deethaniser overheads; Petroleum gas (A complex combination of hydrocarbons produced from distillation of the gas and gasoline fractions from the catalytic cracking process. It contains predominantly ethane and ethylene.)	649-069-00-4	270-768-1	68477-86-1	H, K
Gases (petroleum), deisobutaniser tower overheads; Petroleum gas (A complex combination of hydrocarbons produced by the atmospheric distillation of a butane-butylene stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-070-00-X	270-769-7	68477-87-2	H, K
Gases (petroleum), depropaniser dry, propene-rich; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from the gas and gasoline fractions of a catalytic cracking process. It consists predominantly of propylene with some ethane and propane.)	649-071-00-5	270-772-3	68477-90-7	H, K
Gases (petroleum), depropaniser overheads; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from the gas and gasoline fractions of a catalytic cracking process. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-072-00-0	270-773-9	68477-91-8	H, K
Gases (petroleum), gas recovery plant depropaniser overheads; Petroleum gas (A complex combination of hydrocarbons obtained by fractionation of miscellaneous hydrocarbon streams. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₄ , predominantly propane.)	649-073-00-6	270-777-0	68477-94-1	H, K
Gases (petroleum), Girbatol unit feed; Petroleum gas (A complex combination of hydrocarbons that is used as the feed into the Girbatol unit to remove hydrogen sulfide. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-074-00-1	270-778-6	68477-95-2	H, K
Gases (petroleum), isomerised naphtha fractionator, C ₄ -rich, hydrogen sulfide-free; Petroleum gas	649-075-00-7	270-782-8	68477-99-6	H, K
Tail gas (petroleum), catalytic cracked clarified oil and thermal cracked vacuum residue fractionation reflux drum; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked clarified oil and thermal cracked vacuum residue. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-076-00-2	270-802-5	68478-21-7	H, K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), catalytic cracked naphtha stabilisation absorber; Petroleum gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-077-00-8	270-803-0	68478-22-8	H, K
Tail gas (petroleum), catalytic cracker, catalytic reformer and hydrodesulphuriser combined fractionater; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of products from catalytic cracking, catalytic reforming and hydrodesulphurising processes treated to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-078-00-3	270-804-6	68478-24-0	H, K
Tail gas (petroleum), catalytic reformed naphtha fractionation stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of catalytic reformed naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-079-00-9	270-806-7	68478-26-2	H, K
Tail gas (petroleum), saturate gas plant mixed stream, C ₄ -rich; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of straight-run naphtha, distillation tail gas and catalytic reformed naphtha stabiliser tail gas. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₆ , predominantly butane and isobutane.)	649-080-00-4	270-813-5	68478-32-0	H, K
Tail gas (petroleum), saturate gas recovery plant, C _{1,2} -rich; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of distillate tail gas, straight-run naphtha, catalytic reformed naphtha stabiliser tail gas. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₅ , predominantly methane and ethane.)	649-081-00-X	270-814-0	68478-33-1	H, K
Tail gas (petroleum), vacuum residues thermal cracker; Petroleum gas (A complex combination of hydrocarbons obtained from the thermal cracking of vacuum residues. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-082-00-5	270-815-6	68478-34-2	H, K
Hydrocarbons, C _{3,4} -rich, petroleum distillate; Petroleum gas (A complex combination of hydrocarbons produced by distillation and condensation of crude oil. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₃ through C ₄ .)	649-083-00-0	270-990-9	68512-91-4	H, K
Gases (petroleum), full-range straight-run naphtha dehexaniser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of the full-range straight-run naphtha. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-084-00-6	271-000-8	68513-15-5	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), hydrocracking depropaniser off, hydrocarbon-rich; Petroleum gas (A complex combination of hydrocarbon produced by the distillation of products from a hydrocracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ . It may also contain small amounts of hydrogen and hydrogen sulfide.)	649-085-00-1	271-001-3	68513-16-6	H, K
Gases (petroleum), light straight-run naphtha stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained by the stabilisation of light straight-run naphtha. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₆ .)	649-086-00-7	271-002-9	68513-17-7	H, K
Residues (petroleum), alkylation splitter, C ₄ -rich; Petroleum gas (A complex residuum from the distillation of streams from various refinery operations. It consists of hydrocarbons having carbon numbers in the range of C ₄ through C ₅ , predominantly butane, and boiling in the range of approximately - 11,7 °C to 27,8 °C.)	649-087-00-2	271-010-2	68513-66-6	H, K
Hydrocarbons, C _{1,4} ; Petroleum gas (A complex combination of hydrocarbons provided by thermal cracking and absorber operations and by distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ and boiling in the range of approximately minus 164 °C to minus 0,5 °C.)	649-088-00-8	271-032-2	68514-31-8	H, K
Hydrocarbons, C _{1,4} , sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting hydrocarbon gases to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ and boiling in the range of approximately - 164 °C to - 0,5 °C.)	649-089-00-3	271-038-5	68514-36-3	H, K
Hydrocarbons, C _{1,3} ; Petroleum gas (A complex combination of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ and boiling in the range of approximately - 164 °C to - 42 °C.)	649-090-00-9	271-259-7	68527-16-2	H, K
Hydrocarbons, C _{1,4} , debutaniser fraction; Petroleum gas	649-091-00-4	271-261-8	68527-19-5	H, K
Gases (petroleum), C _{1,5} , wet; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of crude oil and/or the cracking of tower gas oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-092-00-X	271-624-0	68602-83-5	H, K
Hydrocarbons, C _{2,4} ; Petroleum gas	649-093-00-5	271-734-9	68606-25-7	H, K
Hydrocarbons, C ₃ ; Petroleum gas	649-094-00-0	271-735-4	68606-26-8	H, K
Gases (petroleum), alkylation feed; Petroleum gas (A complex combination of hydrocarbons produced by the catalytic cracking of gas oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-095-00-6	271-737-5	68606-27-9	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), depropaniser bottoms fractionation off; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of depropaniser bottoms. It consists predominantly of butane, isobutane and butadiene.)	649-096-00-1	271-742-2	68606-34-8	H, K
Gases (petroleum), refinery blend; Petroleum gas (A complex combination obtained from various processes. It consists of hydrogen, hydrogen sulfide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-097-00-7	272-183-7	68783-07-3	H, K
Gases (petroleum), catalytic cracking; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of the products from a catalytic cracking process. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ .)	649-098-00-2	272-203-4	68783-64-2	H, K
Gases (petroleum), C ₂₋₄ , sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting a petroleum distillate to a sweetening process to convert mercaptans or to remove acidic impurities. It consists predominantly of saturated and unsaturated hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ and boiling in the range of approximately - 51 °C to - 34 °C.)	649-099-00-8	272-205-5	68783-65-3	H, K
Gases (petroleum), crude oil fractionation off; Petroleum gas (A complex combination of hydrocarbons produced by the fractionation of crude oil. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-100-00-1	272-871-7	68918-99-0	H, K
Gases (petroleum), dehexaniser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of combined naphtha streams. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-101-00-7	272-872-2	68919-00-6	H, K
Gases (petroleum), light straight run gasoline fractionation stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of light straight-run gasoline. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-102-00-2	272-878-5	68919-05-1	H, K
Gases (petroleum), naphtha unifier desulphurisation stripper off; Petroleum gas (A complex combination of hydrocarbons produced by a naphtha unifier desulphurisation process and stripped from the naphtha product. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-103-00-8	272-879-0	68919-06-2	H, K
Gases (petroleum), straight-run naphtha catalytic reforming off; Petroleum gas (A complex combination of hydrocarbons obtained by the catalytic reforming of straight-run naphtha and fractionation of the total effluent. It consists of methane, ethane, and propane.)	649-104-00-3	272-882-7	68919-09-5	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), fluidised catalytic cracker splitter overheads; Petroleum gas (A complex combination of hydrocarbons produced by the fractionation of the charge to the C ₃ -C ₄ splitter. It consists predominantly of C ₃ hydrocarbons.)	649-105-00-9	272-893-7	68919-20-0	H, K
Gases (petroleum), straight-run stabiliser off; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation of the liquid from the first tower used in the distillation of crude oil. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-106-00-4	272-883-2	68919-10-8	H, K
Gases (petroleum), catalytic cracked naphtha debutaniser; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked naphtha. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-107-00-X	273-169-3	68952-76-1	H, K
Tail gas (petroleum), catalytic cracked distillate and naphtha stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained by the fractionation of catalytic cracked naphtha and distillate. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-108-00-5	273-170-9	68952-77-2	H, K
Tail gas (petroleum), thermal-cracked distillate, gas oil and naphtha absorber; Petroleum gas (A complex combination of hydrocarbons obtained from the separation of thermal-cracked distillates, naphtha and gas oil. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-109-00-0	273-175-6	68952-81-8	H, K
Tail gas (petroleum), thermal cracked hydrocarbon fractionation stabiliser, petroleum coking; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation of thermal cracked hydrocarbons from a petroleum coking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-110-00-6	273-176-1	68952-82-9	H, K
Gases (petroleum, light steam-cracked, butadiene concentrate; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a thermal cracking process. It consists of hydrocarbons having a carbon number predominantly of C ₄ .)	649-111-00-1	273-265-5	68955-28-2	H, K
Gases (petroleum), straight-run naphtha catalytic reformer stabiliser overhead; Petroleum gas (A complex combination of hydrocarbons obtained by the catalytic reforming of straight-run naphtha and the fractionation of the total effluent. It consists of saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₄ .)	649-112-00-7	273-270-2	68955-34-0	H, K

Substances	Index No	EC No	CAS No	Notes
Hydrocarbons, C ₄ ; Petroleum gas	649-113-00-2	289-339-5	87741-01-3	H, K
Alkanes, C ₁₋₄ , C ₃ -rich; Petroleum gas	649-114-00-8	292-456-4	90622-55-2	H, K
Gases (petroleum), steam-cracker C ₃ -rich; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a steam cracking process. It consists predominantly of propylene with some propane and boils in the range of approximately -70 °C to 0 °C.)	649-115-00-3	295-404-9	92045-22-2	H, K
Hydrocarbons, C ₄ , steam-cracker distillate; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of the products of a steam cracking process. It consists predominantly of hydrocarbons having a carbon number of C ₄ , predominantly 1-butene and 2-butene, containing also butane and isobutene and boiling in the range of approximately -12 °C to 5 °C.)	649-116-00-9	295-405-4	92045-23-3	H, K
Petroleum gases, liquefied, sweetened, C ₄ fraction; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting a liquefied petroleum gas mix to a sweetening process to oxidise mercaptans or to remove acidic impurities. It consists predominantly of C ₄ saturated and unsaturated hydrocarbons.)	649-117-00-4	295-463-0	92045-80-2	H, K, S
Raffinates (petroleum), steam-cracked C ₄ fraction cuprous ammonium acetate extraction, C _{3,5} and C _{3,5} unsaturated, butadiene-free; Petroleum gas	649-119 -00-5	307-769-4	97722-19-5	H, K
Gases (petroleum), amine system feed; Refinery gas (The feed gas to the amine system for removal of hydrogen sulphide. It consists primarily of hydrogen. Carbon monoxide, carbon dioxide, hydrogen sulfide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ may also be present.)	649-120-00-0	270-746-1	68477-65-6	H, K
Gases (petroleum), benzene unit hydrodesulphuriser off; Refinery gas (Off gases produced by the benzene unit. It consists primarily of hydrogen. Carbon monoxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ , including benzene, may also be present.)	649-121-00-6	270-747-7	68477-66-7	H, K
Gases (petroleum), benzene unit recycle, hydrogen-rich; Refinery gas (A complex combination of hydrocarbons obtained by recycling the gases of the benzene unit. It consists primarily of hydrogen with various small amounts of carbon monoxide and hydrocarbons having carbon numbers in the range of C ₁ through C ₆ .)	649-122-00-1	270-748-2	68477-67-8	H, K
Gases (petroleum), blend oil, hydrogen-nitrogen-rich; Refinery gas (A complex combination of hydrocarbons obtained by distillation of a blend oil. It consists primarily of hydrogen and nitrogen with various small amounts of carbon monoxide, carbon dioxide, and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-123-00-7	270-749-8	68477-68-9	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), catalytic reformed naphtha stripper overheads; Refinery gas (A complex combination of hydrocarbons obtained from stabilisation of catalytic reformed naphtha. It consists of hydrogen and saturated hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-124-00-2	270-759-2	68477-77-0	H, K
Gases (petroleum), C ₆₋₈ catalytic reformer recycle; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from catalytic reforming of C ₆ -C ₈ feed and recycled to conserve hydrogen. It consists primarily of hydrogen. It may also contain various small amounts of carbon monoxide, carbon dioxide, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-125-00-8	270-761-3	68477-80-5	H, K
Gases (petroleum), C ₆₋₈ catalytic reformer; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from catalytic reforming of C ₆ -C ₈ feed. It consists of hydrocarbons having carbon numbers in the range of C ₁ through C ₅ and hydrogen.)	649-126-00-3	270-762-9	68477-81-6	H, K
Gases (petroleum), C ₆₋₈ catalytic reformer recycle, hydrogen-rich; Refinery gas	649-127-00-9	270-763-4	68477-82-7	H, K
Gases (petroleum), C ₂ -return stream; Refinery gas (A complex combination of hydrocarbons obtained by the extraction of hydrogen from a gas stream which consists primarily of hydrogen with small amounts of nitrogen, carbon monoxide, methane, ethane, and ethylene. It contains predominantly hydrocarbons such as methane, ethane, and ethylene with small amounts of hydrogen, nitrogen and carbon monoxide.)	649-128-00-4	270-766-0	68477-84-9	H, K
Gases (petroleum), dry sour, gas-concentration-unit-off; Refinery gas (The complex combination of dry gases from a gas concentration unit. It consists of hydrogen, hydrogen sulphide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-129-00-X	270-774-4	68477-92-9	H, K
Gases (petroleum), gas concentration reabsorber distillation; Refinery gas (A complex combination of hydrocarbons produced by distillation of products from combined gas streams in a gas concentration reabsorber. It consists predominantly of hydrogen, carbon monoxide, carbon dioxide, nitrogen, hydrogen sulphide and hydrocarbons having carbon numbers in the range of C ₁ through C ₃ .)	649-130-00-5	270-776-5	68477-93-0	H, K
Gases (petroleum), hydrogen absorber off; Refinery gas (A complex combination obtained by absorbing hydrogen from a hydrogen rich stream. It consists of hydrogen, carbon monoxide, nitrogen, and methane with small amounts of C ₂ hydrocarbons.)	649-131-00-0	270-779-1	68477-96-3	H, K
Gases (petroleum), hydrogen-rich; Refinery gas (A complex combination separated as a gas from hydrocarbon gases by chilling. It consists primarily of hydrogen with various small amounts of carbon monoxide, nitrogen, methane, and C ₂ hydrocarbons.)	649-132-00-6	270-780-7	68477-97-4	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), hydrotreater blend oil recycle, hydrogen-nitrogen-rich; Refinery gas (A complex combination obtained from recycled hydrotreated blend oil. It consists primarily of hydrogen and nitrogen with various small amounts of carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-133-00-1	270-781-2	68477-98-5	H, K
Gases (petroleum), recycle, hydrogen-rich; Refinery gas (A complex combination obtained from recycled reactor gases. It consists primarily of hydrogen with various small amounts of carbon monoxide, carbon dioxide, nitrogen, hydrogen sulphide, and saturated aliphatic hydrocarbons having carbon numbers in the range of C ₁ through C ₅ .)	649-134-00-7	270-783-3	68478-00-2	H, K
Gases (petroleum), reformer make-up, hydrogen-rich; Refinery gas (A complex combination obtained from the reformers. It consists primarily of hydrogen with various small amounts of carbon monoxide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-135-00-2	270-784-9	68478-01-3	H, K
Gases (petroleum), reforming hydrotreater; Refinery gas (A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen, methane, and ethane with various small amounts of hydrogen sulphide and aliphatic hydrocarbons having carbon numbers predominantly in the range C ₃ through C ₅ .)	649-136-00-8	270-785-4	68478-02-4	H, K
Gases (petroleum), reforming hydrotreater, hydrogen-methane-rich; Refinery gas (A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen and methane with various small amounts of carbon monoxide, carbon dioxide, nitrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₂ through C ₅ .)	649-137-00-3	270-787-5	68478-03-5	H, K
Gases (petroleum), reforming hydrotreater make-up, hydrogen-rich; Refinery gas (A complex combination obtained from the reforming hydrotreating process. It consists primarily of hydrogen with various small amounts of carbon monoxide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-138-00-9	270-788-0	68478-04-6	H, K
Gases (petroleum), thermal cracking distillation; Refinery gas (A complex combination produced by distillation of products from a thermal cracking process. It consists of hydrogen, hydrogen sulphide, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-139-00-4	270-789-6	68478-05-7	H, K
Tail gas (petroleum), catalytic cracker refractionation absorber; Refinery gas (A complex combination of hydrocarbons obtained from refractionation of products from a catalytic cracking process. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-140-00-X	270-805-1	68478-25-1	H, K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), catalytic reformed naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from the catalytic reforming of straight-run naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-141-00-5	270-807-2	68478-27-3	H, K
Tail gas (petroleum), catalytic reformed naphtha stabiliser; Refinery gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic reformed naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-142-00-0	270-808-8	68478-28-4	H, K
Tail gas (petroleum), cracked distillate hydrotreater separator; Refinery gas (A complex combination of hydrocarbons obtained by treating cracked distillates with hydrogen in the presence of a catalyst. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-143-00-6	270-809-3	68478-29-5	H, K
Tail gas (petroleum), hydrodesulphurised straight-run naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from hydrodesulphurisation of straight-run naphtha. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-144-00-1	270-810-9	68478-30-8	H, K
Gases (petroleum), catalytic reformed straight-run naphtha stabiliser overheads; Refinery gas (A complex combination of hydrocarbons obtained from the catalytic reforming of straight-run naphtha followed by fractionation of the total effluent. It consists of hydrogen, methane, ethane and propane.)	649-145-00-7	270-999-8	68513-14-4	H, K
Gases (petroleum), reformer effluent high-pressure flash drum off; Refinery gas (A complex combination produced by the high-pressure flashing of the effluent from the reforming reactor. It consists primarily of hydrogen with various small amounts of methane, ethane, and propane.)	649-146-00-2	271-003-4	68513-18-8	H, K
Gases (petroleum), reformer effluent low-pressure flash drum off; Refinery gas (A complex combination produced by low-pressure flashing of the effluent from the reforming reactor. It consists primarily of hydrogen with various small amounts of methane, ethane, and propane.)	649-147-00-8	271-005-5	68513-19-9	H, K
Gases (petroleum), oil refinery gas distillation off; Refinery gas (A complex combination separated by distillation of a gas stream containing hydrogen, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers in the range of C ₁ through C ₆ or obtained by cracking ethane and propane. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₂ , hydrogen, nitrogen, and carbon monoxide.)	649-148-00-3	271-258-1	68527-15-1	H, K

Substances	Index No	EC No	CAS No	Notes
<p>Gases (petroleum), benzene unit hydrotreater depentaniser overheads; Refinery gas</p> <p>(A complex combination produced by treating the feed from the benzene unit with hydrogen in the presence of a catalyst followed by depentanising. It consists primarily of hydrogen, ethane and propane with various small amounts of nitrogen, carbon monoxide, carbon dioxide and hydrocarbons having carbon numbers predominantly in the range of C₁ through C₆. It may contain trace amounts of benzene.)</p>	649-149-00-9	271-623-5	68602-82-4	H, K
<p>Gases (petroleum), secondary absorber off, fluidised catalytic cracker overheads fractionator; Refinery gas</p> <p>(A complex combination produced by the fractionation of the overhead products from the catalytic cracking process in the fluidised catalytic cracker. It consists of hydrogen, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C₁ through C₃.)</p>	649-150-00-4	271-625-6	68602-84-6	H, K
<p>Petroleum products, refinery gases; Refinery gas</p> <p>(A complex combination which consists primarily of hydrogen with various small amounts of methane, ethane and propane.)</p>	649-151-00 -X	271-750-6	68607-11-4	H, K
<p>Gases (petroleum), hydrocracking low-pressure separator; Refinery gas</p> <p>(A complex combination obtained by the liquid-vapour separation of the hydrocracking process reactor effluent. It consists predominantly of hydrogen and saturated hydrocarbons having carbon numbers predominantly in the range of C₁ through C₃.)</p>	649-152-00-5	272-182-1	68783-06-2	H, K
<p>Gases (petroleum), refinery; Refinery gas</p> <p>(A complex combination obtained from various petroleum refining operations. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C₁ through C₃.)</p>	649-153-00-0	272-338-9	68814-67-5	H, K
<p>Gases (petroleum), platformer products separator off; Refinery gas</p> <p>(A complex combination obtained from the chemical reforming of naphthenes to aromatics. It consists of hydrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C₂ through C₄.)</p>	649-154-00-6	272-343-6	68814-90-4	H, K
<p>Gases (petroleum), hydrotreated sour kerosine depentaniser stabiliser off; Refinery gas</p> <p>(The complex combination obtained from the depentaniser stabilisation of hydrotreated kerosine. It consists primarily of hydrogen, methane, ethane, and propane with various small amounts of nitrogen, hydrogen sulphide, carbon monoxide and hydrocarbons having carbon numbers predominantly in the range of C₄ through C₅.)</p>	649-155-00-1	272-775-5	68911-58-0	H, K
<p>Gases (petroleum), hydrotreated sour kerosine flash drum; Refinery gas</p> <p>(A complex combination obtained from the flash drum of the unit treating sour kerosine with hydrogen in the presence of a catalyst. It consists primarily of hydrogen and methane with various small amounts of nitrogen, carbon monoxide, and hydro-carbons having carbon numbers predominantly in the range of C₂ through C₅.)</p>	649-156-00-7	272-776-0	68911-59-1	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), distillate unifier desulphurisation stripper off; Refinery gas (A complex combination stripped from the liquid product of the unifier desulphurisation process. It consists of hydrogen sulphide, methane, ethane, and propane.)	649-157-00-2	272-873-8	68919-01-7	H, K
Gases (petroleum), fluidised catalytic cracker fractionation off; Refinery gas (A complex combination produced by the fractionation of the overhead product of the fluidised catalytic cracking process. It consists of hydrogen, hydrogen sulphide, nitrogen, and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-158-00-8	272-874-3	68919-02-8	H, K
Gases (petroleum), fluidised catalytic cracker scrubbing secondary absorber off; Refinery gas (A complex combination produced by scrubbing the overhead gas from the fluidised catalytic cracker. It consists of hydrogen, nitrogen, methane, ethane and propane.)	649-159-00-3	272-875-9	68919-03-9	H, K
Gases (petroleum), heavy distillate hydrotreater desulphurisation stripper off; Refinery gas (A complex combination stripped from the liquid product of the heavy distillate hydrotreater desulphurisation process. It consists of hydrogen, hydrogen sulphide, and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-160-00-9	272-876-4	68919-04-0	H, K
Gases (petroleum), platformer stabiliser off, light ends fractionation; Refinery gas (A complex combination obtained by the fractionation of the light ends of the platinum reactors of the platformer unit. It consists of hydrogen, methane, ethane and propane.)	649-161-00-4	272-880-6	68919-07-3	H, K
Gases (petroleum), preflash tower off, crude distillation; Refinery gas (A complex combination produced from the first tower used in the distillation of crude oil. It consists of nitrogen and saturated aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-162-00-X	272-881-1	68919-08-4	H, K
Gases (petroleum), tar stripper off; Refinery gas (A complex combination obtained by the fractionation of reduced crude oil. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-163-00-5	272-884-8	68919-11-9	H, K
Gases (petroleum), unifier stripper off; Refinery gas (A combination of hydrogen and methane obtained by fractionation of the products from the unifier unit.)	649-164-00-0	272-885-3	68919-12-0	H, K
Tail gas (petroleum), catalytic hydrodesulphurised naphtha separator; Refinery gas (A complex combination of hydrocarbons obtained from the hydrodesulphurisation of naphtha. It consists of hydrogen, methane, ethane, and propane.)	649-165-00-6	273-173-5	68952-79-4	H, K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), straight-run naphtha hydrodesulphuriser; Refinery gas (A complex combination obtained from the hydrodesulphurisation of straight-run naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-166-00-1	273-174-0	68952-80-7	H, K
Gases (petroleum), sponge absorber off, fluidised catalytic cracker and gas oil desulphuriser overhead fractionation; Refinery gas (A complex combination obtained by the fractionation of products from the fluidised catalytic cracker and gas oil desulphuriser. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-167-00-7	273-269-7	68955-33-9	H, K
Gases (petroleum), crude distillation and catalytic cracking; Refinery gas (A complex combination produced by crude distillation and catalytic cracking processes. It consists of hydrogen, hydrogen sulphide, nitrogen, carbon monoxide and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-168-00-2	273-563-5	68989-88-8	H, K
Gases (petroleum), gas oil diethanolamine scrubber off; Refinery gas (A complex combination produced by desulphurisation of gas oils with diethanolamine. It consists predominantly of hydrogen sulphide, hydrogen and aliphatic hydrocarbons having carbon numbers in the range of C ₁ through C ₅ .)	649-169-00-8	295-397-2	92045-15-3	H, K
Gases (petroleum), gas oil hydrodesulphurisation effluent; Refinery gas (A complex combination obtained by separation of the liquid phase from the effluent from the hydrogenation reaction. It consists predominantly of hydrogen, hydrogen sulphide and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₃ .)	649-170-00-3	295-398-8	92045-16-4	H, K
Gases (petroleum), gas oil hydrodesulphurisation purge; Refinery gas (A complex combination of gases obtained from the reformer and from the purges from the hydrogenation reactor. It consists predominantly of hydrogen and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-171-00-9	295-399-3	92045-17-5	H, K
Gases (petroleum), hydrogenator effluent flash drum off; Refinery gas (A complex combination of gases obtained from flash of the effluents after the hydrogenation reaction. It consists predominantly of hydrogen and aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-172-00-4	295-400-7	92045-18-6	H, K
Gases (petroleum), naphtha steam cracking high-pressure residual; Refinery gas (A complex combination obtained as a mixture of the non-condensable portions from the product of a naphtha steam cracking process as well as residual gases obtained during the preparation of subsequent products. It consists predominantly of hydrogen and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ with which natural gas may also be mixed.)	649-173-00-X	295-401-2	92045-19-7	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), residue visbaking off; Refinery gas (A complex combination obtained from viscosity reduction of residues in a furnace. It consists predominantly of hydrogen sulphide and paraffinic and olefinic hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-174-00-5	295-402-8	92045-20-0	H, K
Gases (petroleum), C _{3,4} ; Petroleum gas (A complex combination of hydrocarbons produced by distillation of products from the cracking of crude oil. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₄ , predominantly of propane and propylene, and boiling in the range of approximately - 51 °C to - 1 °C.)	649-177-00-1	268-629-5	68131-75-9	H, K
Tail gas (petroleum), catalytic cracked distillate and catalytic cracked naphtha fractionation absorber; Petroleum gas (The complex combination of hydrocarbons from the distillation of the products from catalytic cracked distillates and catalytic cracked naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₄ .)	649-178-00-7	269-617-2	68307-98-2	H, K
Tail gas (petroleum), catalytic polymerisation naphtha fractionation stabiliser; Petroleum gas (A complex combination of hydrocarbons from the fractionation stabilisation products from polymerisation of naphtha. It consists predominantly of hydrocarbons having carbon numbers in the range of C ₁ through C ₄ .)	649-179-00-2	269-618-8	68307-99-3	H, K
Tail gas (petroleum), catalytic reformed naphtha fractionation stabiliser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation stabilisation of catalytic reformed naphtha and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-180-00-8	269-619-3	68308-00-9	H, K
Tail gas (petroleum), cracked distillate hydrotreater stripper; Petroleum gas (A complex combination of hydrocarbons obtained by treating thermal cracked distillates with hydrogen in the presence of a catalyst. It consists predominantly of saturated hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-181-00-3	269-620-9	68308-01-0	H, K
Tail gas (petroleum), straight-run distillate hydrodesulphuriser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from catalytic hydrodesulphurisation of straight run distillates and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-182-00-9	269-630-3	68308-10-1	H, K
Tail gas (petroleum), gas oil catalytic cracking absorber; Petroleum gas (A complex combination of hydrocarbons obtained from the distillation of products from the catalytic cracking of gas oil. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-183-00-4	269-623-5	68308-03-2	H, K

Substances	Index No	EC No	CAS No	Notes
Tail gas (petroleum), gas recovery plant; Petroleum gas (A complex combination of hydrocarbons from the distillation of products from miscellaneous hydrocarbon streams. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-184-00-X	269-624-0	68308-04-3	H, K
Tail gas (petroleum), gas recovery plant deethaniser; Petroleum gas (A complex combination of hydrocarbons from the distillation of products from miscellaneous hydrocarbon streams. It consists of hydrocarbon having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-185-00-5	269-625-6	68308-05-4	H, K
Tail gas (petroleum), hydrodesulphurised distillate and hydrodesulphurised naphtha fractionator, acid-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of hydrodesulphurised naphtha and distillate hydrocarbon streams and treated to remove acidic impurities. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-186-00-0	269-626-1	68308-06-5	H, K
Tail gas (petroleum), hydrodesulphurised vacuum gas oil stripper, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from stripping stabilisation of catalytic hydrodesulphurised vacuum gas oil and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-187-00-6	269-627-7	68308-07-6	H, K
Tail gas (petroleum), light straight-run naphtha stabiliser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation stabilisation of light straight-run naphtha and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₅ .)	649-188-00-1	269-629-8	68308-09-8	H, K
Tail gas (petroleum), propane-propylene alkylation feed prep deethaniser; Petroleum gas (A complex combination of hydrocarbons obtained from the distillation of the reaction products of propane with propylene. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-189-00-7	269-631-9	68308-11-2	H, K
Tail gas (petroleum), vacuum gas oil hydrodesulphuriser, hydrogen sulphide-free; Petroleum gas (A complex combination of hydrocarbons obtained from catalytic hydrodesulphurisation of vacuum gas oil and from which hydrogen sulphide has been removed by amine treatment. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₆ .)	649-190-00-2	269-632-4	68308-12-3	H, K
Gases (petroleum), catalytic cracked overheads; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from the catalytic cracking process. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ and boiling in the range of approximately - 48 °C to 32 °C.)	649-191-00-8	270-071-2	68409-99-4	H, K

Substances	Index No	EC No	CAS No	Notes
Alkanes, C ₁₋₂ ; Petroleum gas	649-193-00-9	270-651-5	68475-57-0	H, K
Alkanes, C ₂₋₃ ; Petroleum gas	649-194-00-4	270-652-0	68475-58-1	H, K
Alkanes, C ₃₋₄ ; Petroleum gas	649-195-00-X	270-653-6	68475-59-2	H, K
Alkanes, C ₄₋₅ ; Petroleum gas	649-196-00-5	270-654-1	68475-60-5	H, K
Fuel gases; Petroleum gas (A combination of light gases. It consists predominantly of hydrogen and/or low molecular weight hydrocarbons.)	649-197-00-0	270-667-2	68476-26-6	H, K
Fuel gases, crude oil of distillates; Petroleum gas (A complex combination of light gases produced by distillation of crude oil and by catalytic reforming of naphtha. It consists of hydrogen and hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ and boiling in the range of approximately - 217 °C to - 12 °C.)	649-198-00-6	270-670-9	68476-29-9	H, K
Hydrocarbons, C ₃₋₄ ; Petroleum gas	649-199-00-1	270-681-9	68476-40-4	H, K
Hydrocarbons, C ₄₋₅ ; Petroleum gas	649-200-00-5	270-682-4	68476-42-6	H, K
Hydrocarbons, C ₂₋₄ , C ₃ -rich; Petroleum gas	649-201-00-0	270-689-2	68476-49-3	H, K
Petroleum gases, liquefied; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of crude oil. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₇ and boiling in the range of approximately -40 °C to 80 °C.)	649-202-00-6	270-704-2	68476-85-7	H, K, S
Petroleum gases, liquefied, sweetened; Petroleum gas (A complex combination of hydrocarbons obtained by subjecting liquefied petroleum gas mix to a sweetening process to convert mercaptans or to remove acidic impurities. It consists of hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₇ and boiling in the range of approximately -40 °C to 80 °C.)	649-203-00-1	270-705-8	68476-86-8	H, K, S
Gases (petroleum), C ₃₋₄ , isobutane-rich; Petroleum gas (A complex combination of hydrocarbons from the distillation of saturated and unsaturated hydrocarbons usually ranging in carbon numbers from C ₃ through C ₆ , predominantly butane and isobutane. It consists of saturated and unsaturated hydrocarbons having carbon numbers in the range of C ₃ through C ₄ , predominantly isobutane.)	649-204-00-7	270-724-1	68477-33-8	H, K
Distillates (petroleum), C ₃₋₆ , piperylene-rich; Petroleum gas (A complex combination of hydrocarbons from the distillation of saturated and unsaturated aliphatic hydrocarbons usually ranging in the carbon numbers C ₃ through C ₆ . It consists of saturated and unsaturated hydrocarbons having carbon numbers in the range of C ₃ through C ₆ , predominantly piperlenes.)	649-205-00-2	270-726-2	68477-35-0	H, K

Substances	Index No	EC No	CAS No	Notes
Gases (petroleum), butane splitter overheads; Petroleum gas (A complex combination of hydrocarbons obtained from the distillation of the butane stream. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₄ .)	649-206-00-8	270-750-3	68477-69-0	H, K
Gases (petroleum), C _{2,3} ; Petroleum gas (A complex combination of hydrocarbons produced by the distillation of products from a catalytic fractionation process. It contains predominantly ethane, ethylene, propane, and propylene.)	649-207-00-3	270-751-9	68477-70-3	H, K
Gases (petroleum), catalytic-cracked gas oil depropaniser bottoms, C ₄ -rich acid-free; Petroleum gas (A complex combination of hydrocarbons obtained from fractionation of catalytic cracked gas oil hydrocarbon stream and treated to remove hydrogen sulphide and other acidic components. It consists of hydrocarbons having carbon numbers in the range of C ₃ through C ₅ , predominantly C ₄ .)	649-208-00-9	270-752-4	68477-71-4	H, K
Gases (petroleum), catalytic-cracked naphtha debutaniser bottoms, C _{3,5} -rich; Petroleum gas (A complex combination of hydrocarbons obtained from the stabilisation of catalytic cracked naphtha. It consists of aliphatic hydrocarbons having carbon numbers predominantly in the range of C ₃ through C ₅ .)	649-209-00-4	270-754-5	68477-72-5	H, K
Tail gas (petroleum), isomerised naphtha fractionation stabiliser; Petroleum gas (A complex combination of hydrocarbons obtained from the fractionation stabilisation products from isomerised naphtha. It consists predominantly of hydrocarbons having carbon numbers predominantly in the range of C ₁ through C ₄ .)	649-210-00-X	269-628-2	68308-08-7	H, K

Appendix 5

Point 30 — Toxic to reproduction: category 1

Substances	Index No	EC No	CAS No	Notes
Carbon monoxide	006-001-00-2	211-128-3	630-08-0	
Lead hexafluorosilicate	009-014-00-1	247-278-1	25808-74-6	
Lead compounds with the exception of those specified elsewhere in this Annex	082-001-00-6			A, E
Lead alkyls	082-002-00-1			A, E
Lead azide	082-003-00-7	236-542-1	13424-46-9	
Lead chromate	082-004-00-2	231-846-0	7758-97-6	
Lead di(acetate)	082-005-00-8	206-104-4	301-04-2	
Trilead bis(orthophosphate)	082-006-00-3	231-205-5	7446-27-7	
Lead acetate	082-007-00-9	215-630-3	1335-32-6	
Lead(II) methanesulphonate	082-008-00-4	401-750-5	17570-76-2	
C.I. Pigment Yellow 34; (This substance is identified in the Colour Index by Colour Index Constitution No C.I. 77603.)	082-009-00-X	215-693-7	1344-37-2	
C.I. Pigment Red 104; (This substance is identified in the Colour Index by Colour Index Constitution No C.I. 77605.)	082-010-00-5	235-759-9	12656-85-8	
Lead hydrogen arsenate	082-011-00-0	232-064-2	7784-40-9	
1,2-Dibromo-3-chloropropane	602-021-00-6	202-479-3	96-12-8	
2-bromopropane	602-085-00-5	200-855-1	75-26-3	E
Warfarin; 4-hydroxy-3-(3-oxo-1-phenylbutyl)coumarin	607-056-00-0	201-377-6	81-81-2	
Lead 2,4,6-trinitroresorcinoxide, lead styphnate	609-019-00-4	239-290-0	15245-44-0	

Appendix 6

Point 30 — Toxic to reproduction: category 2

Substances	Index No	EC No	CAS No	Notes
Linuron (ISO) 3-(3,4-dichlorophenyl)-1-methoxy-1-methylurea	006-021-00-1	206-356-5	330-55-2	E
6-(2-Chloroethyl)-6(2-methoxyethoxy)-2,5,7,10-tetraoxa-6-silaundecane; etacelasil	014-014-00-X	253-704-7	37894-46-5	
Flusilazole (ISO); bis(4-fluorophenyl)-(methyl)-(1H-1,2,4-triazol-1-ylmethyl)-silane	014-017-00-6	—	85509-19-9	E
A mixture of: 4-[[bis-(4-fluorophenyl)-methylsilyl]methyl]-4H-1,2,4-triazole; 1-[[bis-(4-fluorophenyl)methyl-silyl]methyl]-1H-1,2,4-triazole	014-019-00-7	403-250-2	—	E
Potassium dichromate	024-002-00-6	231-906-6	7778-50-9	E
Ammonium dichromate	024-003-00-1	232-143-1	7789-09-5	E
Sodium dichromate anhydrate	024-004-00-7	234-190-3	10588-01-9	E
Sodium dichromate, dihydrate	024-004-01-4	234-190-3	7789-12-0	E
Sodium chromate	024-018-00-3	231-889-5	7775-11-3	E
Nickel tetracarbonyl	028-001-00-1	236-669-2	13463-39-3	
Cadmium fluoride	048-006-00-2	232-222-0	7790-79-6	E
Cadmium chloride	048-008-00-3	233-296-7	10108-64-2	E
Cadmium sulphate	048-009-00-9	233-331-6	10124-36-4	E
Benzo[a]pyrene; benzo[d,e,f]chrysene	601-032-00-3	200-028-5	50-32-8	
1-Bromopropane Propyl bromide n-Propyl bromide	602-019-00-5	203-445-0	106-94-5	
1,2,3-Trichloropropane	602-062-00-X	202-486-1	96-18-4	D
Diphenylether; octabromo derivate	602-094-00-4	251-087-9	32536-52-0	
2-Methoxyethanol; ethylene glycol monomethyl ether; methylglycol	603-011-00-4	203-713-7	109-86-4	
2-Ethoxyethanol; ethylene glycol monoethyl ether; ethylglycol	603-012-00-X	203-804-1	110-80-5	
1,2-Dimethoxyethane ethylene glycol dimethyl ether EGDME	603-031-00-3	203-794-9	110-71-4	
2,3-Epoxypropan-1-ol; glycidol oxiranemethanol	603-063-00-8	209-128-3	556-52-5	E
2-Methoxypropanol	603-106-00-0	216-455-5	1589-47-5	
Bis(2-methoxyethyl) ether	603-139-00-0	203-924-4	111-96-6	
R-2,3-epoxy-1-propanol	603-143-002	404-660-4	57044-25-4	E
1,2-Bis(2-methoxyethoxy)ethane TEGDME; Triethylene glycol dimethyl ether; Triglyme	603-176-00-2	203-977-3	112-49-2	

Substances	Index No	EC No	CAS No	Notes
4,4'-isobutylethylenediphenol; 2,2-bis (4'-hydroxyphenyl)-4-methylpentane	604-024-00-8	401-720-1	6807-17-6	
Tetrahydrothiopyran-3-carboxaldehyde	606-062-00-0	407-330-8	61571-06-0	
2-Methoxyethyl acetate; ethylene glycol monomethyl ether acetate; methylglycol acetate	607-036-00-1	203-772-9	110-49-6	
2-Ethoxyethyl acetate; ethylene glycol monoethyl ether acetate; ethylglycol acetate	607-037-00-7	203-839-2	111-15-9	
2-Ethylhexyl 3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl methyl thioacetate	607-203-00-9	279-452-8	80387-97-9	
Bis(2-Methoxyethyl) phthalate	607-228-00-5	204-212-6	117-82-8	
2-Methoxypropyl acetate	607-251-00-0	274-724-2	70657-70-4	
Fluazifop-butyl (ISO); butyl (RS)-2-[4-(5-trifluoromethyl-2-pyridyloxy)phenoxy]propionate	607-304-00-8	274-125-6	69806-50-4	
Vinclozolin (ISO); N-3,5-Dichlorophenyl-5-methyl-5-vinyl-1,3-oxazolidine-2,4-dione	607-307-00-4	256-599-6	50471-44-8	
Methoxyacetic acid	607-312-00-1	210-894-6	625-45-6	E
Bis(2-ethylhexyl) phthalate; di-(2-ethylhexyl) phthalate; DEHP	607-317-00-9	204-211-0	117-81-7	
Dibutyl phthalate; DBP	607-318-00-4	201-557-4	84-74-2	
(+/-) tetrahydrofurfuryl (R)-2-[4-(6-chloroquinoxalin-2-yloxy)phenoxy]propionate	607-373-00-4	414-200-4	119738-06-6	E
1,2-benzenedicarboxylic acid, dipentylester, branched and linear [1] n-pentyl-isopentylphthalate [2] di-n-pentyl phthalate [3] Diisopentylphthalate [4]	607-426-00-1	284-032-2 [1]-[2] 205-017-9 [3]-[4]	84777-06-0 [1]-[2] 131-18-0 [3] 42925-80-4 [4]	
Benzyl butyl phthalate BBP	607-430-00-3	201-622-7	85-68-7	
1,2-Benzenedicarboxylic acid di-C7-11-branched and linear alkylesters	607-480-00-6	271-084-6	68515-42-4	
A mixture of: disodium 4-(3-ethoxycarbonyl-4-(5-(3-ethoxycarbonyl-5-hydroxy-1-(4-sulfonatophenyl)pyrazol-4-yl)penta-2,4-dienylidene)-4,5-dihydro-5-oxopyrazol-1-yl)benzenesulfonate; trisodium 4-(3-ethoxycarbonyl-4-(5-(3-ethoxycarbonyl-5-oxido-1-(4-sulfonatophenyl)pyrazol-4-yl)penta-2,4-dienylidene)-4,5-dihydro-5-oxopyrazol-1-yl)benzenesulfonate	607-487-00-4	402-660-9	—	
Dinocap (ISO)	609-023-00-6	254-408-0	39300-45-3	E
Binapacryl (ISO); 2-sec-butyl-4,6-dinitrophenyl-3-methylcrotonate	609-024-00-1	207-612-9	485-31-4	
Dinoseb; 6-sec-butyl-2,4-dinitrophenol	609-025-00-7	201-861-7	88-85-7	
Salts and esters of dinoseb, with the exception of those specified elsewhere in this Annex	609-026-00-2			
Dinoterb; 2-tert-butyl-4,6-dinitrophenol	609-030-00-4	215-813-8	1420-07-1	
Salts and esters of dinoterb	609-031-00-X			
Nitrofen (ISO); 2,4 dichlorophenyl 4-nitrophenyl ether	609-040-00-9	217-406-0	1836-75-5	
Methyl-ONN-azoxymethyl acetate; methyl azoxy methyl acetate	611-004-00-2	209-765-7	592-62-1	

Substances	Index No	EC No	CAS No	Notes
2-[2-hydroxy-3-(2-chlorophenyl)carbamoyl-1-naphthylazo]-7-[2-hydroxy-3-(3-methylphenyl)carbamoyl-1-naphthylazo]fluoren-9-one	611-131-00-3	420-580-2	—	
Azafenidin	611-140-00-2	—	68049-83-2	
Tridemorph (ISO); 2,6-dimethyl-4-tridecylmorpholine	613-020-00-5	246-347-3	24602-86-6	
Ethylene thiourea; imidazolidine-2-thione; 2-imidazoline-2-thiol	613-039-00-9	202-506-9	96-45-7	
Carbendazim (ISO) methyl benzimidazol-2-ylcarbamate	613-048-00-8	234-232-0	10605-21-7	
Benomyl (ISO) methyl 1-(butylcarbamoyl)benzimidazol-2-ylcarbamate	613-049-00-3	241-775-7	17804-35-2	
Cycloheximide	613-140-00-8	200-636-0	66-81-9	
Flumioxazin (ISO); N-(7-Fluoro-3,4-dihydro-3-oxo-4-prop-2-ynyl-2H-1,4-benzoxazin-6-yl)cyclohex-1-ene-1,2-dicarboxamide	613-166-00-X	—	103361-09-7	
(2RS,3RS)-3-(2-Chlorophenyl)-2-(4-fluorophenyl)-[(1H-1,2,4-triazol-1-yl)-methyl]oxirane	613-175-00-9	406-850-2	106325-08-0	
3-Ethyl-2-methyl-2-(3-methylbutyl)-1,3-oxazolidine	613-191-00-6	421-150-7	143860-04-2	
A mixture of: 1,3,5-tris(3-aminomethylphenyl)-1,3,5-(1H,3H,5H)-triazine-2,4,6-trione; a mixture of oligomers of 3,5-bis(3-aminomethylphenyl)-1-poly[3,5-bis(3-aminomethylphenyl)-2,4,6-trioxo-1,3,5-(1H,3H,5H)-triazin-1-yl]-1,3,5-(1H,3H,5H)-triazine-2,4,6-trione	613-199-00-X	421-550-1	—	
N, N-dimethylformamide; dimethyl formamide	616-001-00-X	200-679-5	68-12-2	
N, N-Dimethylacetamide	616-011-00-4	204-826-4	127-19-5	E
Formamide	616-052-00-8	200-842-0	75-12-7	
N-methylacetamide	616-053-00-3	201-182-6	79-16-3	
N-methylformamide	616-056-00-X	204-624-6	123-39-7	E

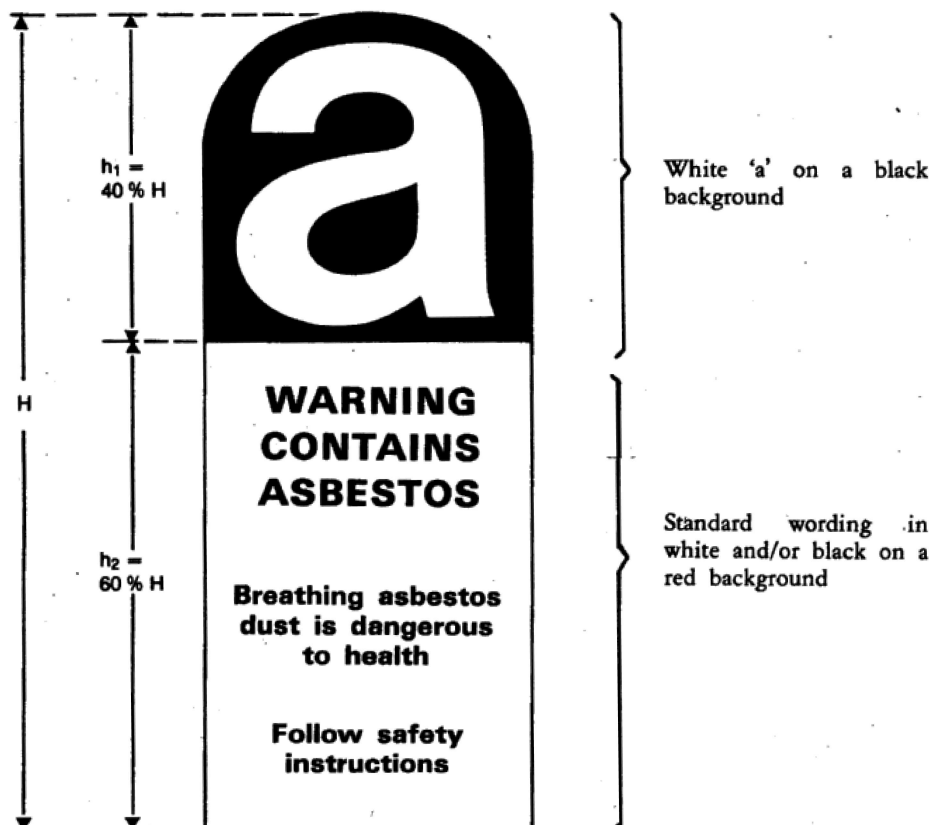
Appendix 7

Special provisions on the labelling of articles containing asbestos

1. All articles containing asbestos or the packaging thereof must bear the label defined as follows:
 - (a) the label conforming to the specimen below shall be at least 5 cm high (H) and 2,5 cm wide;
 - (b) it shall consist of two parts:
 - the top part ($h_1 = 40\% H$) shall include the letter 'a' in white, on a black background,
 - the bottom part ($h_2 = 60\% H$) shall include the standard wording in white and/or black, on a red background, and shall be clearly legible;
 - (c) if the article contains crocidolite, the words 'contains asbestos' used in the standard wording shall be replaced by 'contains crocidolite/blue asbestos'.

Member States may exclude from the provision of the first subparagraph articles intended to be placed on the market in their territory. The labelling of these articles must however bear the wording 'contains asbestos';

- (d) if labelling takes the form of direct printing on the articles, a single colour contrasting with the background colour is sufficient.



2. The label mentioned in this Appendix shall be affixed in accordance with the following rules:
 - (a) on each of the smallest units supplied;
 - (b) if an article has asbestos-based components, it is sufficient for these components only to bear the label. The labelling may be dispensed with if smallness of size or unsuitability of packaging make it impossible for a label to be affixed to the component.

3. Labelling of packaged articles containing asbestos
 - 3.1. The following particulars shall appear on clearly legible and indelible labelling on the packaging of packaged articles containing asbestos:
 - (a) the symbol and relevant indications of danger in accordance with this Annex;
 - (b) safety instructions which must be selected in accordance with the particulars in this Annex, inasmuch as they are relevant for the particular article.Where additional safety information is provided on the packaging, this shall not weaken or contradict the particulars given in accordance with points (a) and (b).
 - 3.2. Labelling in accordance with 3.1 shall be effected by means of:
 - a label firmly affixed to the packaging, or
 - a (tie-on) label securely attached to the package, or
 - direct printing of the packaging.
 - 3.3. Articles containing asbestos and which are packaged only in loose plastic wrapping or the like shall be regarded as packaged articles and shall be labelled in accordance with 3.2. If articles are separated from such packages and placed on the market unpackaged, each of the smallest units supplied shall be accompanied by labelling particulars in accordance with 3.1.
 4. Labelling of unpackaged articles containing asbestos

For unpackaged articles containing asbestos, labelling in accordance with 3.1 shall be effected by means of:

 - a label firmly affixed to the article containing asbestos,
 - a (tie-on) label securely attached to such an article,
 - direct printing on the articles,

or, if the abovementioned is not reasonably practicable as in the case of, for example, smallness of size of the article, the unsuitable nature of the article's properties or certain technical difficulties by means of a hand-out with labelling in accordance with 3.1.
 5. Without prejudice to Community provisions on safety and hygiene at work, the label affixed to the article which may, in the context of its use, be processed or finished, shall be accompanied by any safety instructions which may be appropriate for the article concerned, and in particular by the following:
 - operate if possible out of doors or in a well-ventilated place,
 - preferably use hand tools or low-speed tools equipped, if necessary, with an appropriate dust-extraction facility. If high-speed tools are used, they should always be equipped with such a facility,
 - if possible, dampen before cutting or drilling,
 - dampen dust and place it in a properly closed receptacle and dispose of it safely.
 6. The labelling of any article intended for domestic use which is not covered by Section 5 and which is likely, during use, to release asbestos fibres shall, if necessary, contain the following safety instruction: 'replace when worn'.
 7. The labelling of articles containing asbestos shall be in the official language or languages of the Member State(s) where the article is placed on the market.
-

Appendix 8

Point 43 — Azocolourants

List of aromatic amines

	CAS No	Index No	EC No	Substances
1.	92-67-1	612-072-00-6	202-177-1	biphenyl-4-ylamine 4-aminobiphenyl xenylamine
2.	92-87-5	612-042-00-2	202-199-1	benzidine
3.	95-69-2		202-441-6	4-chloro-o-toluidine
4.	91-59-8	612-022-00-3	202-080-4	2-naphthylamine
5.	97-56-3	611-006-00-3	202-591-2	o-aminoazotoluene 4-amino-2',3-dimethylazobenzene 4-o-tolylazo-o-toluidine
6.	99-55-8		202-765-8	5-nitro-o-toluidine
7.	106-47-8	612-137-00-9	203-401-0	4-chloroaniline
8.	615-05-4		210-406-1	4-methoxy-m-phenylenediamine
9.	101-77-9	612-051-00-1	202-974-4	4,4'-methylenedianiline 4,4'-diaminodiphenylmethane
10.	91-94-1	612-068-00-4	202-109-0	3,3'-dichlorobenzidine 3,3'-dichlorobiphenyl-4,4'-ylenediamine
11.	119-90-4	612-036-00-X	204-355-4	3,3'-dimethoxybenzidine o-dianisidine
12.	119-93-7	612-041-00-7	204-358-0	3,3'-dimethylbenzidine 4,4'-bi-o-toluidine
13.	838-88-0	612-085-00-7	212-658-8	4,4'-methylenedi-o-toluidine
14.	120-71-8		204-419-1	6-methoxy-m-toluidine p-cresidine
15.	101-14-4	612-078-00-9	202-918-9	4,4'-methylene-bis-(2-chloro-aniline) 2,2'-dichloro-4,4'-methylene-dianiline
16.	101-80-4		202-977-0	4,4'-oxydianiline
17.	139-65-1		205-370-9	4,4'-thiodianiline
18.	95-53-4	612-091-00-X	202-429-0	o-toluidine 2-aminotoluene
19.	95-80-7	612-099-00-3	202-453-1	4-methyl-m-phenylenediamine
20.	137-17-7		205-282-0	2,4,5-trimethylaniline
21.	90-04-0	612-035-00-4	201-963-1	o-anisidine 2-methoxyaniline
22.	60-09-3	611-008-00-4	200-453-6	4-amino azobenzene

Appendix 9

Point 43 — Azocolourants

List of azodyes

	CAS No	Index No	EC No	Substances
1.	Not allocated Component 1: CAS-No: 118685-33-9 $C_{39}H_{23}ClCrN_7O_{12}S_2 \cdot 2Na$ Component 2: $C_{46}H_{30}CrN_{10}O_{20}S_2 \cdot 3Na$	611-070-00-2	405-665-4	A mixture of: disodium (6-(4-anisidino)-3-sulfonato-2-(3,5-dinitro-2-oxidophenylazo)-1-naphtholato)(1-(5-chloro-2-oxidophenylazo)-2-naphtholato)chromate(1-); trisodium bis(6-(4-anisidino)-3-sulfonato-2-(3,5-dinitro-2-oxidophenylazo)-1-naphtholato)chromate(1-)

Appendix 10

Point 43 — Azocolourants

List of testing methods

European standardisation organisation (*)	Reference and title of the standard	Reference document	Reference of the superseded standard
CEN	Leather — Chemical tests — Determination of certain azocolourants in dyed leathers	CEN ISO/TS 17234:2003	NONE
CEN	Textiles — Methods for the determination of certain aromatic amines derived from azocolourants — Part 1: Detection of the use of certain azo colorants accessible without extraction	EN 14362-1:2003	NONE
CEN	Textiles — Methods for determination of certain aromatic amines derived from azocolourants — Part 2: Detection of the use of certain azo colorants accessible by extracting the fibres	EN 14362-2:2003	NONE

(*) ESO: European standardisation organisations:

CEN: rue de Stassart 36, B-1050 Bruxelles; tel. (32-2) 550 08 11, fax (32-2) 550 08 19. <http://www.cenorm.be>

CENELEC: rue de Stassart 36, B-1050 Bruxelles; tel. (32-2) 519 68 71, fax (32-2) 519 69 19. <http://www.cenelec.org>

ETSI: 650, route des Lucioles, F-06921 Sophia Antipolis; tel. (33) 492 94 42 00, fax (33) 493 65 47 16. <http://www.etsi.org>