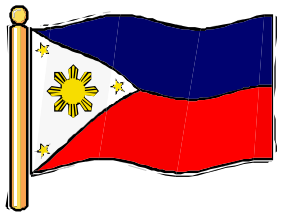
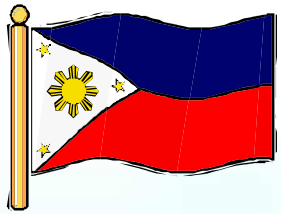


Overview and Updates of Chemicals Management in the Philippines (RA 6969)

EMMANUELITA D. MENDOZA
OIC, Chief – Chemical Management Section
Environmental Management Bureau
Department of Environment and Natural Resources
PHILIPPINES
February 22, 2018

Outline of Presentation

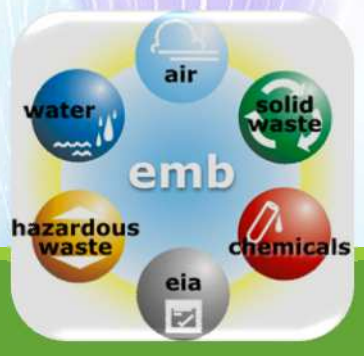


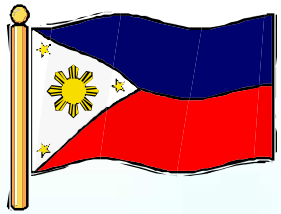
1. Brief Introduction
2. Key Services of the Chemical Management under Republic Act No. 6969
3. Latest trends in the Philippine Inventory of Chemicals and Chemical Substances (PICCS) and the PreManufacture and PreImportation Notification (PMPIN) Process
4. Updates of Chemical Management in relation to various UNEP Chemical Conventions
5. Moving Forward

WHAT IS THE MANDATE OF DENR-EMB?

- The DENR is responsible for governing and supervising the exploration, development, utilization and conservation of the Philippines' natural resources and protection of its environment.

- The EMB as the "brown sector" of the DENR was delegated by the Secretary to implement various national environmental laws and programs on Clean Air, Clean Water, Solid Waste Management, EIA System, Environmental Education and Toxic Chemicals and Hazardous Waste (RA 6969).



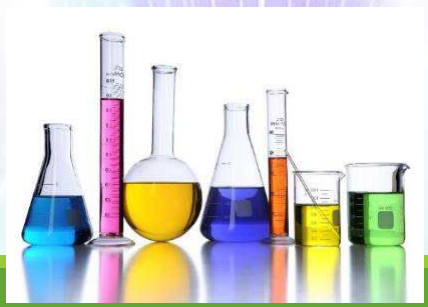


LEGAL MANDATE

- Republic Act 6969 refers to the "Toxic Substances and Hazardous and Nuclear Wastes Act of 1990"

- DENR Administrative Order No. 20 is the Implementing Rules and Regulations of RA 6969 and approved in 1992

- DENR–EMB is the Implementing agency

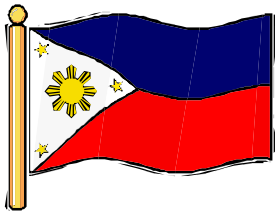


DECLARATION OF POLICY

- To regulate, restrict or prohibit all industrial chemical substances and mixtures that present unreasonable risk and/or injury to health or the environment.

- To facilitate research and studies on toxic chemicals.

CHEMICALS' LIFE CYCLE



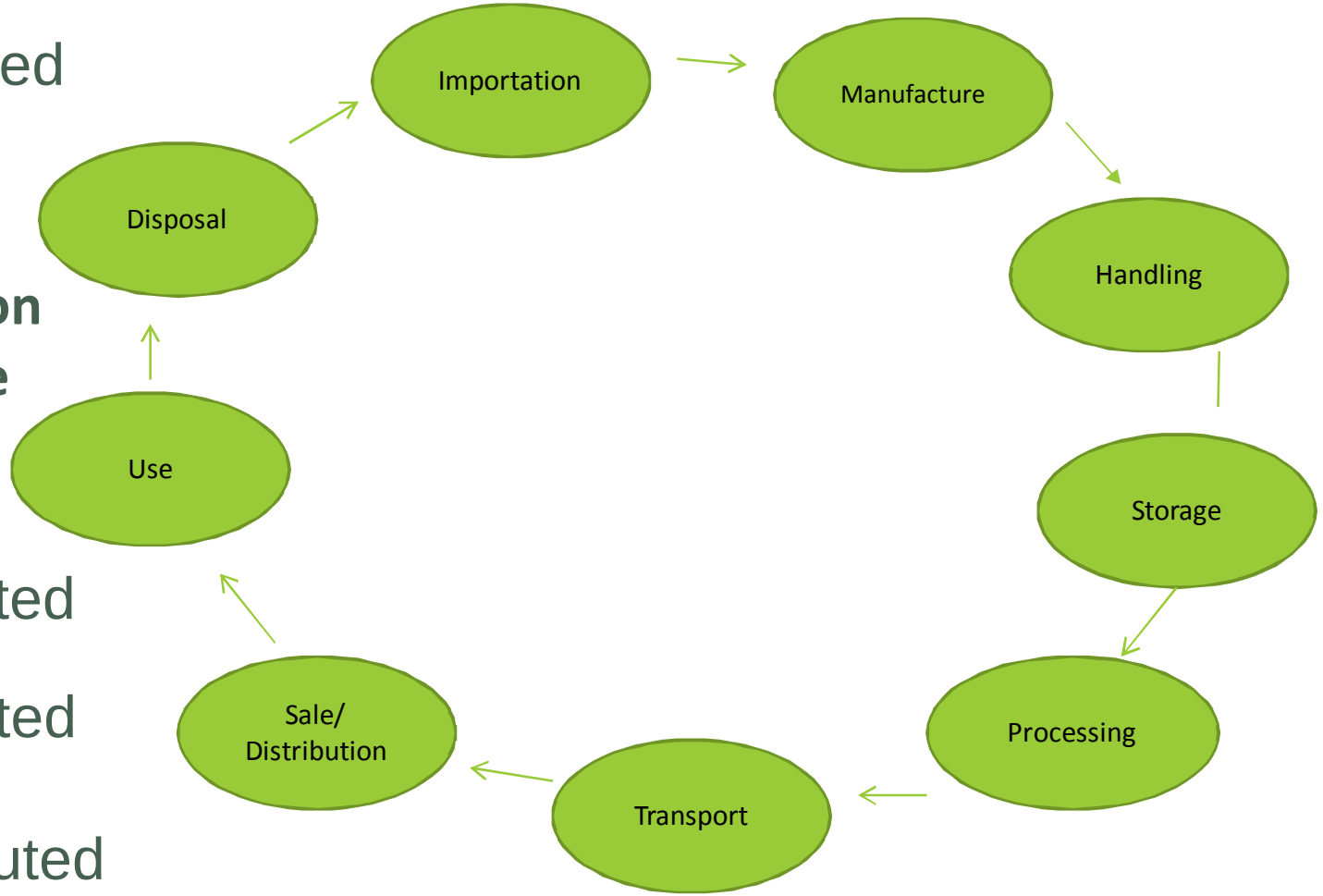
Regulated

Limitation of use

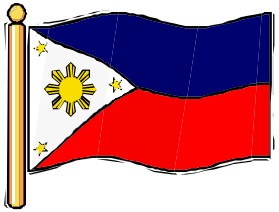
Restricted

Prohibited

Substituted



Overview of Key Components in Chemical Management



PreManufacture PreImportation Notification (PMPIN) Process

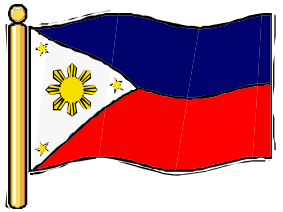
Priority Chemical List (PCL) for Regulated Chemicals

Chemical Control Orders (CCOs) for Controlled Chemicals

Other Initiatives and Chemical Special Projects

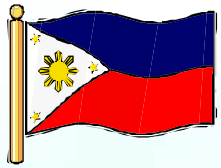
Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Legal Basis of PCL	Legal Basis of Various chemicals under CCOs	Multilateral Environmental Agreements (MEAs)and UNEP Conventions
PreManufacture and PreImportation Notification (PMPIN)	Procedural Requirements and Exemption	Devolution of Functions & Processing of CCO Permits and Clearances to ROs	Globally Harmonized System (GHS) for Classification & Labeling Requirements of Toxic Chemicals
Small Quantity Importation (SQI) Polymers and Polymers of Low Concern (PLC)	Monitoring & Compliance	CCO Monitoring for amendment and Phase-out	Other Issues & Concerns

The PMPIN review and evaluation of new substances has provided for information in updating the inventory of all existing unregulated and regulated chemicals and chemical substances in the Philippines (PICCS)



LATEST TRENDS IN PICCS AND PMPIN

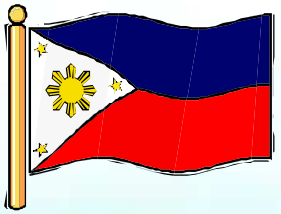
Philippine Inventory of Chemical and Chemical Substances (PICCS)



In 1993, the initial List of chemicals & chemical substances was provided by the industry and published in

- 1995 - 15,000
- 2000 - 21,000
- 2005 - 24,000
- 2008 - 44,200
- 2009 - 46,863
- 2011 - 46,963
- 2014 - 47,048
- 2015 - 47,079

WHAT IS PICCS?



- The PICCS is a list of both hazardous and non hazardous substances updated as a result of PMPIN process that will be further review for regulation.

- The PICCS is placed into a specially designated computer database at the EMB to facilitate efficient compiling/storage, organizing and managing of the data.

- The PICCS database can be checked from the EMB website: **http://chemical.emb.gov.ph**

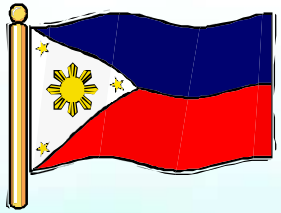
RISK ASSESSMENT

RA 6969 is a risk-based system. Assessment of notified chemicals is done by the EMB on effects of chemicals to health and environment based on

- Hazard identification
- Dose response assessment
- Exposure assessment
- Risk characterization and
- Risk Management

There is a crucial need for sufficient chemicals' information and/or its own tests

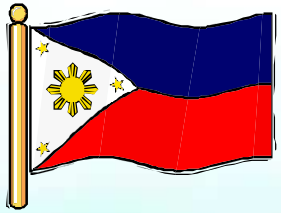
PMPIN APPLICATION?



- Detailed PMPIN Form - Chemicals not yet listed in any countries
  - 120 – 180 working days (Processing Time)

- Abbreviated PMPIN Form – Chemicals already listed USA, Japan, Canada, Australia, EU and Korea
  - 90 working days (Processing Time)

PMPIN
ABBREVIATED & DETAILED FORM



Section A: Premise Information (Importer/Manufacturer)
Premise Name:
Premise Address (Facility/Warehouse):
Mailing/Office Address:
Responsible Person:
Contact Number:

Section B: Chemical Identification Information
Chemical (CAS) Name:
CAS RN:
IUPAC:
Common Name:
Molecular Formula/Structure:
Synonyms for the New Chemical:
Trade Name of the New Chemical:

Section C: Production Import and Intended Use
Intended use:
Total Quantity Produced/Imported in 12 months (Kg):
Estimate the new quantity in the following categories (Kg):
Site Limited Industrial
Commercial Consumer

Section D: Occupational Exposure
Type of Activity:
Number of Workers:
Exposure of Activity:

Section E: Estimate Environmental Release and Disposal
Release Quantity:
Release Media:
Control Measure:

Section G: Statement on Physicochemical Characteristics
Form: Color:
Odor:
Boiling Point:
Melting/Freezing Point:
Flash Point:
Density:
Solubility:
Vapor Pressure:
Partition Coefficient:
Others:

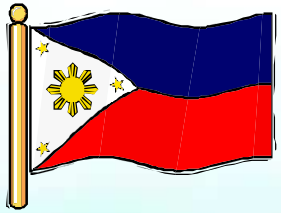
Section H: Statement on Toxicological Effects
Acute Toxicity (Oral/Dermal/Inhalation):
Skin Irritation/Corrosion:
Eye Irritation/Corrosion:
Sensitization:
Carcinogenicity:
Genotoxicity:
Mutagenicity:
Chronic Toxicity:
Specific Target Organ Toxicity (STOT):
Others:

Section F: Regulatory Status in other Country
Country Name:
Regulatory Status in the Country:
Is MSDS available in the Country:

Section I: Statement on Environmental Effects
Acute Aquatic Toxicity (Fish/Daphnia/Algae):
Degradability/Persistency:
Bioaccumulation:
Chronic Aquatic Toxicity:

Section J: List of Other Companies (Joint Submission)
Company Name:
Company Address:
Contact Person:
Contact Number:

SUBSTANTIVE PMPIN REVIEW



1. Submission of complete information of MSDS/SDS
2. Complete information in the Abbreviated and Detailed Form should be provided with data focus on:

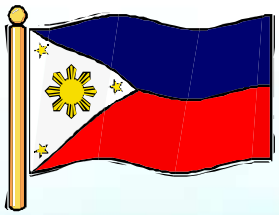
- Physical and Chemical Properties
- Toxicological Effects
- Ecotoxicological Effects

3. For Detailed Form, laboratory reports for the abovementioned information are required.
4. Interagency Chemical Review Committee assist EMB in the review of Detailed PMPIN Form

16-SECTION MSDS/SDS FORMAT

1. Product and company information
2. Composition information on ingredients
3. Hazard identification
4. First aid measures
5. Fire fighting measures
6. Accidental release
7. Handling and storage
8. Exposure controls, personal protection
9. Physical, chemical properties
10. Stability and reactivity
11. Toxicological information
12. Ecological information
13. Disposal considerations
14. Transport information
15. Regulatory information
16. Other information

ASSESSMENT REVIEW & EVALUATION OF NEW CHEMICALS



Abbreviated Form
Detailed Form

Ecological Effects

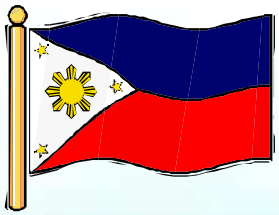
Physico-Chemical Characteristics

PreManufacture PreImportation Notification (PMPIN) Process

Interagency Review/ Chemical Review Committee

Toxicological Effects

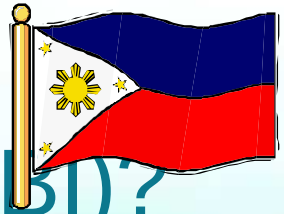
Other relevant Attachments



WHO WILL APPLY?

- Only Local (Ph) Importers
- Only Local (Ph) manufacturers
- 3rd Party (Ph) Applicants

WHAT IS CONFIDENTIAL BUSINESS INFORMATION (CBI)?



- The local counterpart will apply reflecting the information in the PMPIN Form by following the SDS of the products and not the individual chemical.

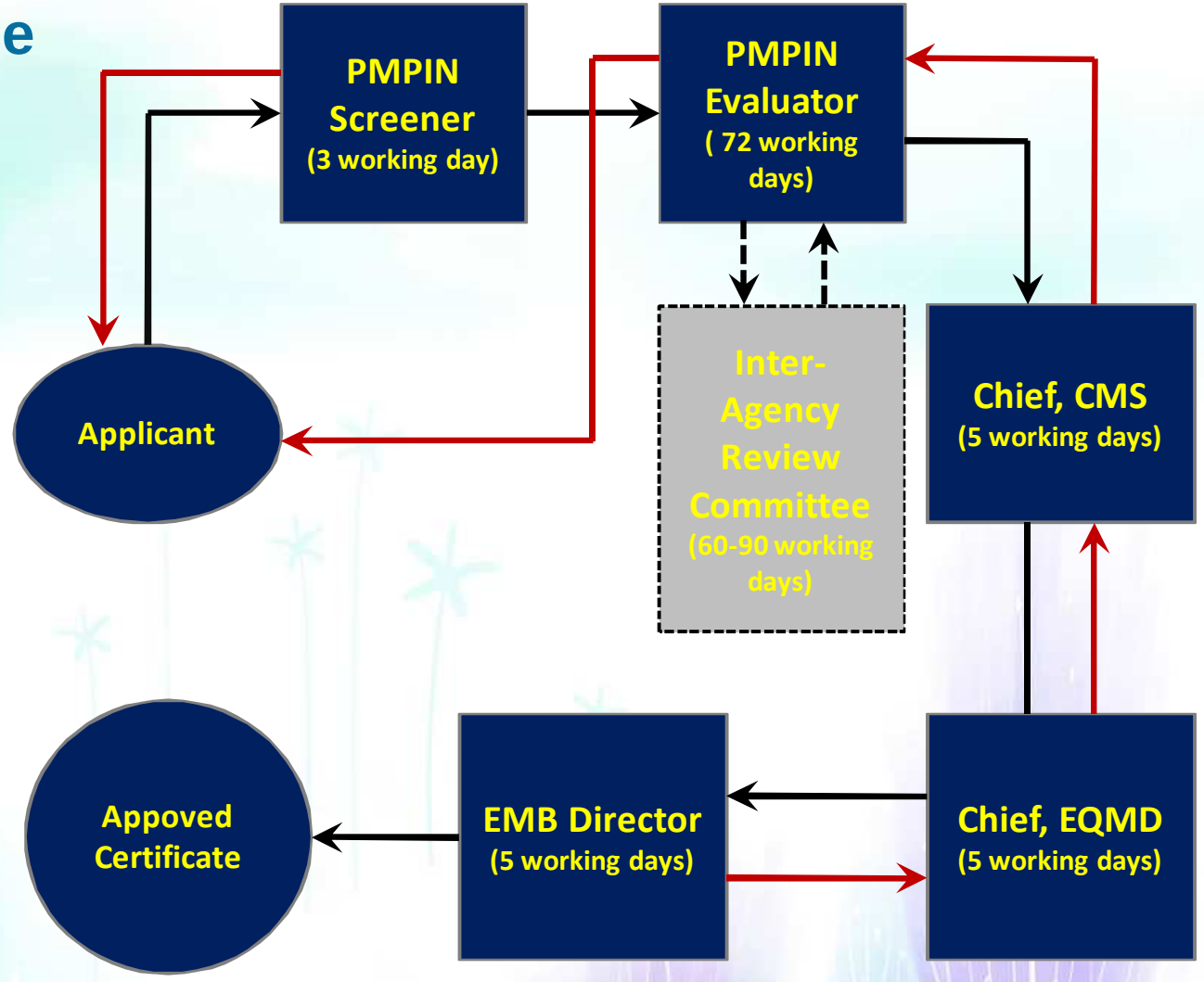
- Supplier will directly disclosed the new chemicals with CBI to the EMB – Central Office through chemicals.emb.gov.ph or www.emb.gov.ph

- Or the supplier may send the information through the EMB – NCR, EMB – Region 4A and EMB – Region 3.

Ref: EMB Memorandum Circular No. 2014 - 01

PMPIN Compliance Certificate

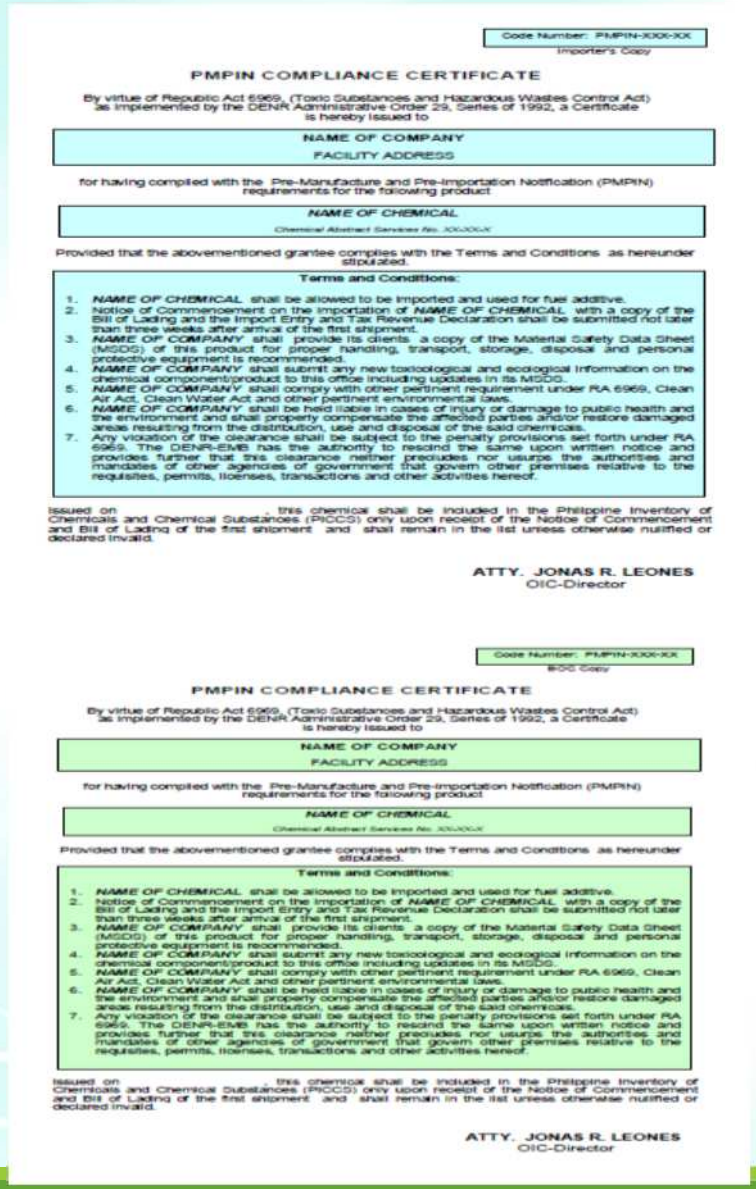
DOCUMENTARY Requirements:
1.Notarized and completed
•(Abbreviated form): for chemicals manufacture
•(Detailed form): for chemicals manufactured or imported from Safety Data Sheet (SDS)
4.Specific Use of the Chemical
5.Annual volume of import
6.Payment of processing fee:
for PMPIN3- P 2,600
for PMPIN4- P 4,500
7. for Confidential Business Information (CBI) – for PMPIN application containing confidential business information.



Log-on to : http://210.213.80.213

Payment can be paid at any Landbank Branch (Agency Code: D1609 / Acct #: 3402-2806-70)

PMPIN Compliance Certificate



Code Number: PMPIN-XXX-XX
Importer's Copy

PMPIN COMPLIANCE CERTIFICATE

By virtue of Republic Act 6969, (Toxic Substances and Hazardous Wastes Control Act) as implemented by the DENR Administrative Order 29, Series of 1992, a Certificate is hereby issued to

NAME OF COMPANY
FACILITY ADDRESS

for having complied with the Pre-Manufacture and Pre-Importation Notification (PMPIN) requirements for the following product

NAME OF CHEMICAL
Chemical Abstract Services No. XXX-XX-X

Provided that the abovementioned grantee complies with the Terms and Conditions as hereunder stipulated.

Terms and Conditions:

1. ***NAME OF CHEMICAL*** shall be allowed to be imported and used for fuel additive.
2. Notice of Commencement on the importation of ***NAME OF CHEMICAL*** with a copy of the Bill of Lading and the Import Entry and Tax Revenue Declaration shall be submitted not later than three weeks after arrival of the first shipment.
3. ***NAME OF COMPANY*** shall provide its clients a copy of the Material Safety Data Sheet (MSDS) of this product for proper handling, transport, storage, disposal and personal protective equipment is recommended.
4. ***NAME OF COMPANY*** shall submit any new toxicological and ecological information on the chemical component/product to this office including updates in its MSDS.
5. ***NAME OF COMPANY*** shall comply with other pertinent requirement under RA 6969, Clean Air Act, Clean Water Act and other pertinent environmental laws.
6. ***NAME OF COMPANY*** shall be held liable in cases of injury or damage to public health and the environment and shall properly compensate the affected parties and/or restore damaged areas resulting from the distribution, use and disposal of the said chemicals.
7. Any violation of the clearance shall be subject to the penalty provisions set forth under RA 6969. The DENR-EMB has the authority to rescind the same upon written notice and provides further that this clearance neither precludes nor usurps the authorities and mandates of other agencies of government that govern other premises relative to the requisites, permits, licenses, transactions and other activities hereof.

Issued on _____, this chemical shall be included in the Philippine Inventory of Chemicals and Chemical Substances (PICCS) only upon receipt of the Notice of Commencement and Bill of Lading of the first shipment and shall remain in the list unless otherwise nullified or declared invalid.

ATTY. JONAS R. LEONES
OIC-Director

Code Number: PMPIN-XXX-XX
BOC Copy

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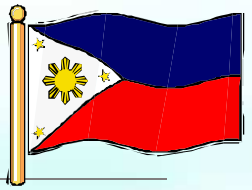
ATTY. JONAS R. LEONES
OIC-Director

A copy of the Certificate shall be retrieved and print directly by the company at their own computer.

Copy of the Bureau of Custom (BOC)at the Port of Entry.

SMALL QUANTITY IMPORTATION (SQI) CLEARANCE



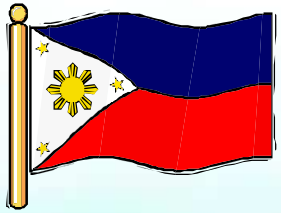
- This is an exemption to the PMPIN Process

- Small Quantity Importation (SQI) Clearance is required prior to importation of less than 1,000 kg./yr of pure chemical substances or component chemicals in percentage by weight of product, mixtures not listed in the PICCS.

- Documentary requirements: Letter request, notarized application form and Safety Data Sheet (SDS) of chemicals.

- Validity of SQI Clearance is one (1) year

POLYMER EXEMPTION TO THE PMPIN PROCESS

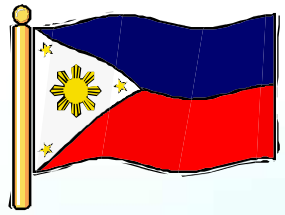


Polymer – (a) means a substance consisting of molecules characterized by the sequence of one or more types of monomer units and comprising a simple weight majority of molecules containing at least three monomer units which are covalently bound to at least one other monomer unit or other reactant and consists of less than a simple weight majority of molecules of the same molecular weight. Such molecules must be distributed over a range of molecular weights wherein differences in the molecular weight are primarily attributable to differences in the number of monomer units;

POLYMER EXEMPTION

Polymer – (b) is a substance composed of more than 50% of molecules containing a sequence of at least three monomer units covalently bound to at least one other monomer unit or other reactant; (c) has molecules distributed over a range of MW; and (d) has no single MW molecule reaching 50% (w/w) of total molecules

Polymer of Low Concern (PLC) – (a) must meet the definition of polymers; and (b) must not be unstable, degradable, decompose, or depolymerize..



APPLICATION FORM FOR POLYMER EXEMPTION FROM PMPIN PROCEDURES

1. **Type of Application** ☐ Confidential ☐ Not Confidential
2. **Information of Applicant**

   Name of Company (Philippine Company): _____
   Company Address: _____
   _____
   Contact Person: _____
   Email Address: _____
   Telephone: _____
   Fax: _____
3. **Polymer Information**

   Chemical Name: _____
   CAS Number: _____
   Product or Trade Name: _____
   Use: _____
4. **Monomer Information**

Chemical Name	CAS Number	Percentage by Weight	Listed on PICCS? (Y/N)

5. **List of Attachment**
6. **Signature over Name of Applicant**

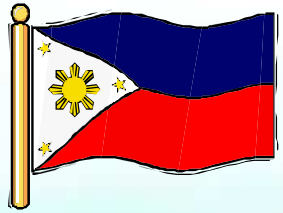
   _____ Name of Applicant _____ Position
7. **Notarization**

   SUBCRIBE and SWORN before me, a Notary Public; this _____ day of _____, affiant exhibiting to me this Community Tax Receipt:

Name	CTR No.	Issued at	Issued on

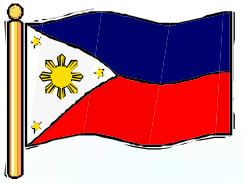
   _____ Notary Public

   Doc No: _____
   Page No: _____
   Book No: _____
   Series of: _____



CRITERIA FOR POLYMER

1. All of its monomers must be listed in the PICCS.
2. Polymers containing monomers and other reactants (including crosslinking, chain transfer agents, and post polymerization reactants) not in the PICCS added at quantities less than 2 percent (by weight);
3. A new polymer if two or more of the top (top by weight) monomers are included in the definition of another polymer already in PICCS.

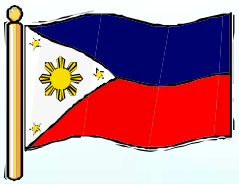


4. The Polymer of Low Concern (PLC) shall fall into one of the conditions:

a. Polymers that have:

- Number Average Molecular Weight (NAMW) equal to or greater than 10,000 Da,
- Less than 5% of oligomers with MW lower than 1000 Da and less than 2% of oligomers with MW lower than 500 Da, and
- For cationic polymers, the FGEW should be greater than 5,000 Da.

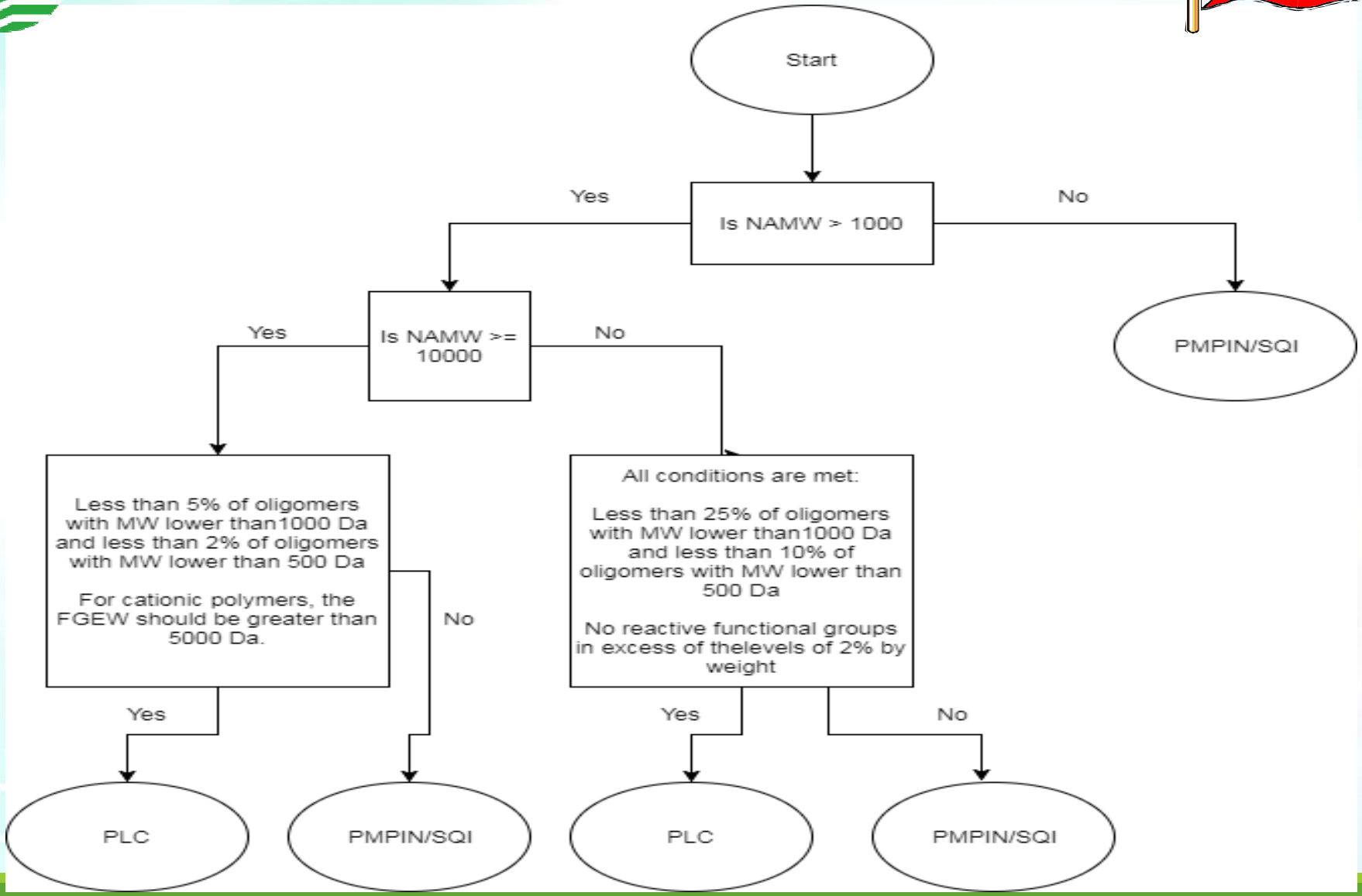
CRITERIA FOR POLYMER



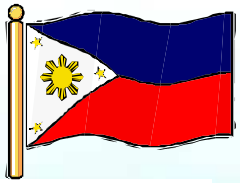
b. Polymers that have:

- NAMW equal to or greater than 1000 Da and less than 10,000 Da,
- Less than 25% of oligomers with MW lower than 1000 Da and less than 10% of oligomers with MW lower than 500 Da, and
- No RFGs in excess of the levels of 2% by weight.

PLC PROCESS FLOW



CHECKLIST OF REQUIREMENTS



1. Duly notarized and accomplished Polymer Exemption Form.

2. Polymer information like specific chemical name, chemical structure, CAS number (if available), use/s of the polymer.

3. SDS for the polymer alone or the mixture/product where the polymer is part of the ingredients.

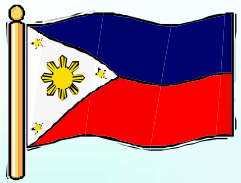
4. 100% composition of the polymer including CAS numbers of monomers.

5. Data requirements that show proof that the polymer meets any of the conditions i.e., GPC Data, IR Spectroscopy, etc.

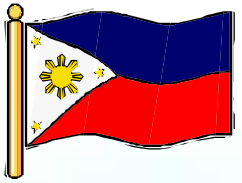
6. Proof or certificate that the polymer is/are low of concern from US, EU, Canada, and Australia.

7. Processing fee of PhP 1000.00 per polymer per product.

WHAT ARE CURRENT ISSUES?

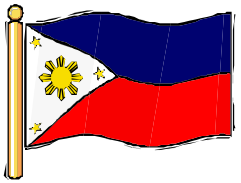


- Disclosure of confidential information is hard to acquire
  - The supplier is different from the manufacturer of the chemical/substance. The supplier doesn't have the chemical information.
  - The supplier and manufacturer of the chemical/substance do not want to disclose information even to Regulatory Office.
- Confidential information sent by email sometimes do not indicate anything about the importer



WHAT ARE CURRENT ISSUES?

- The provided information is not translated in English
- For non-confidential applications for new chemicals in mixtures, the client sometimes puts only the properties of the mixture itself. We need the new chemical properties.
- Contact number indicated on the application is unavailable
- Wrong chemical names and/or CAS Registry Numbers are provided.



UPDATES
IN CHEMICAL MANAGEMENT

ONLINE PERMITING AND MONITORING SYSTEM (OPMS)

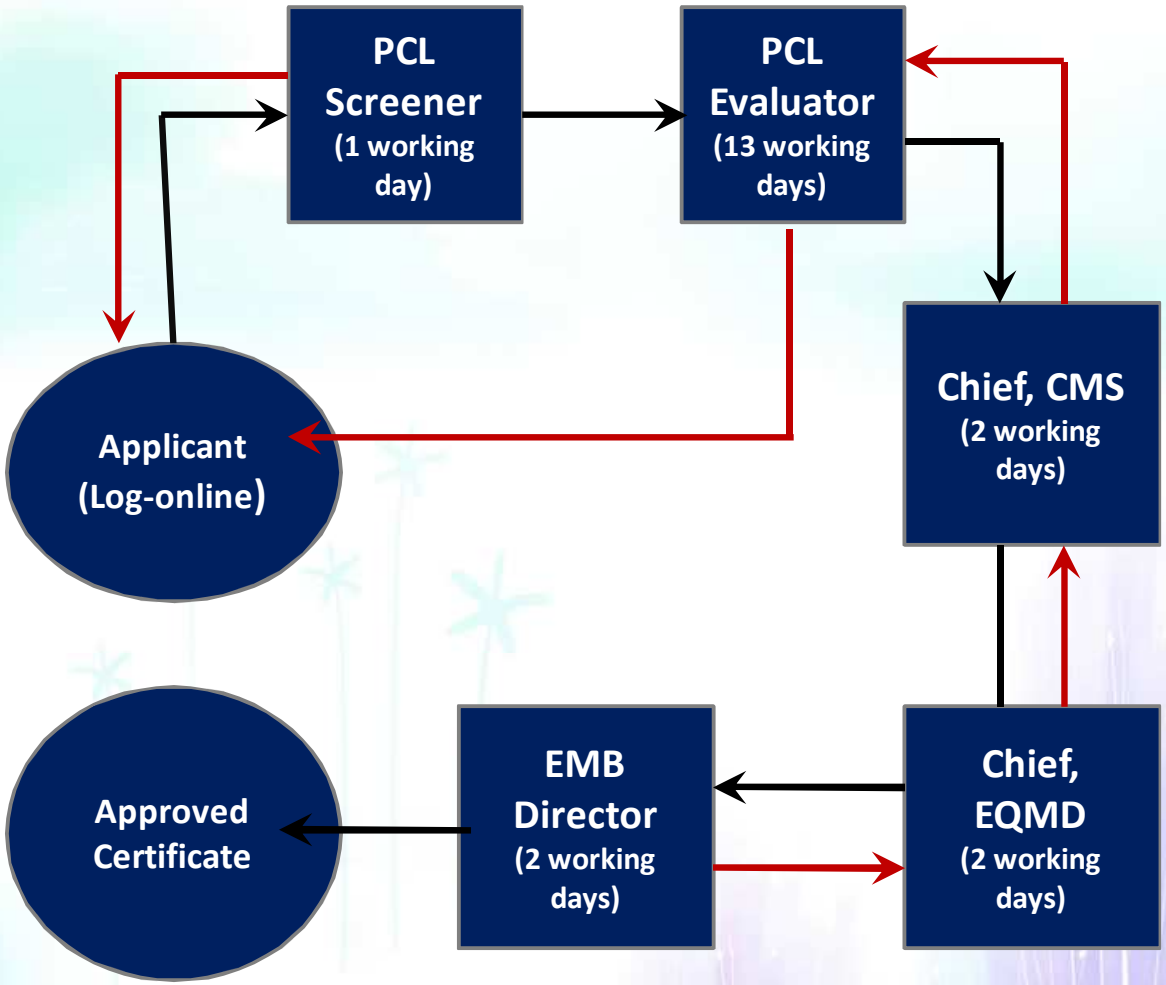
- Continuation of OPMS 1 - PMPIN, and PCL and

  OPMS 2 - CCO and SQI in order to have
  - Better and facilitate processing application and retrieval inter-Regional Offices and Central Office)
  - Minimize voluminous document storage
  - Minimize people coming to the Office
  - Reduce letters and other communication pertaining to the application
- More transparent transactions
- Accessible data access even outside the Office

PCL Compliance Certificate

DOCUMENTARY REQUIREMENTS

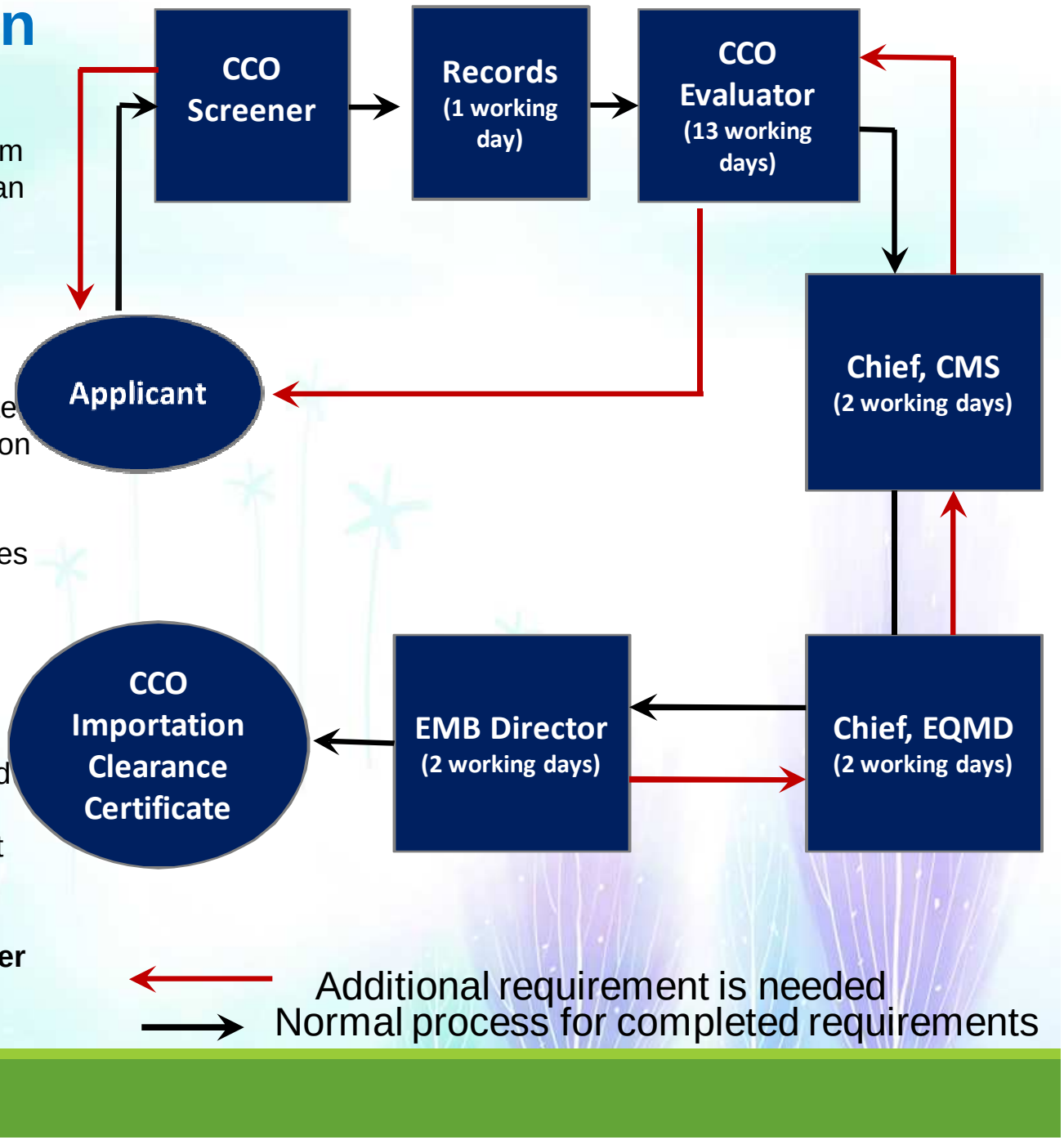
1.Application form
2.Notarized Annual Report Form
3.Safety Data Sheet
4.DENR Identification Number
5.Environmental Compliance Certificate
6.Discharge Permit/Exemption
7.Permit to Operate for APCD and/or APSI
8.Summary of Importation Data (**for importers**)
9.Chemical Management Plan
10.Management Operation Flow Chart
11.Contingency/Emergency Plan
12.List of Users/Customers with corresponding projected/required volume
13.Groundwater/Surface Water Monitoring Results (**for user/manufacturer**)
14.Self Monitoring Report **(for user/manufacturers)**
15.Photos of the storage facility/warehouse
16.PCO Accreditation/Training Certificates



Please note that the PCL Compliance Certificate shall be renewed one (1) month prior to expiration date of previous Certificate

CCO Registration

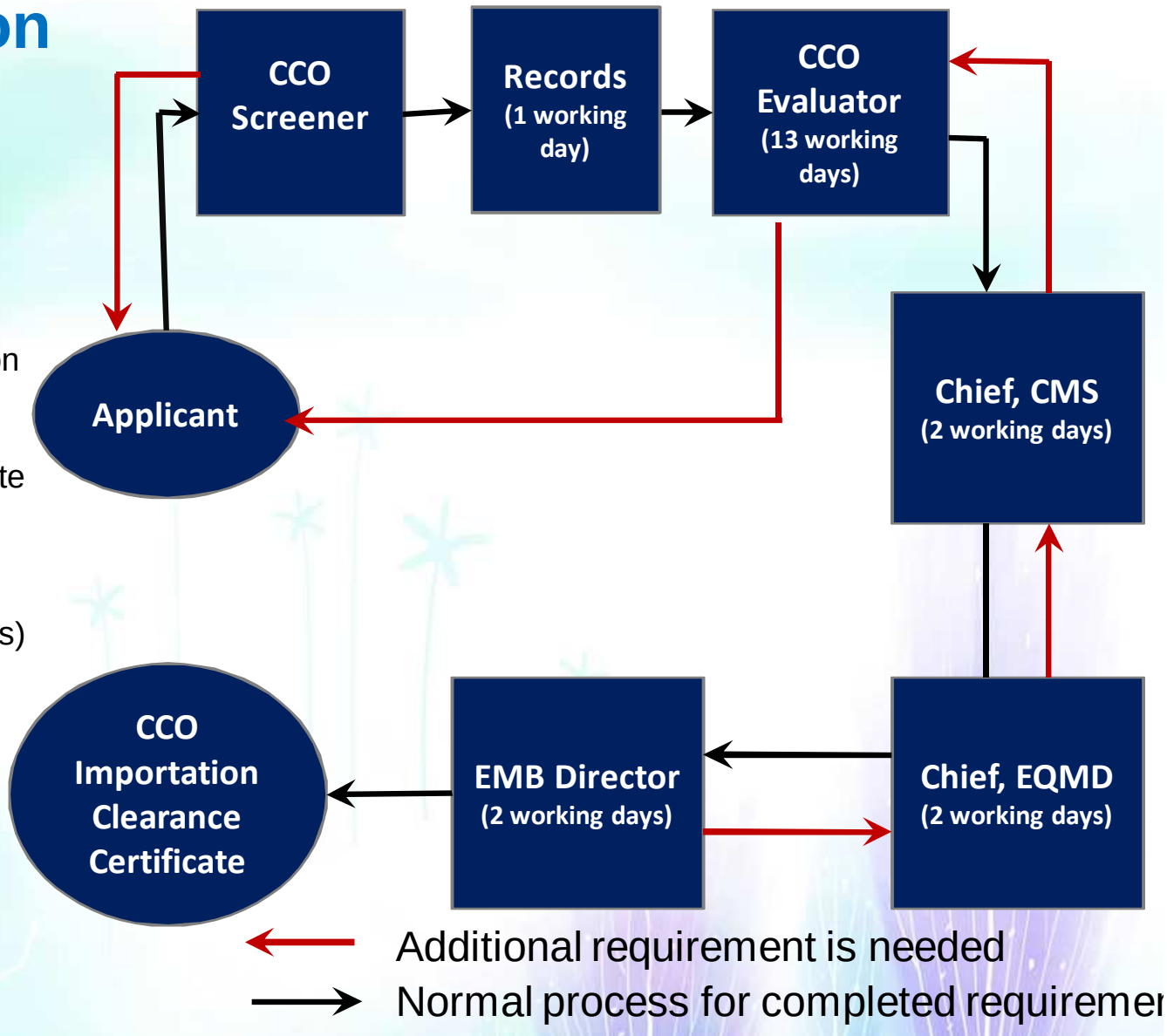
1. Covering Letter
2. Notarized CCO Registration Form
3. CCO Chemical Management Plan
4. DENR ID Number
5. Environmental Compliance Certificate / Certificate of Non-coverage
6. Valid Discharge Permit/Interconnection Certificate
7. Valid Permit to Operate/Exemption
8. SEC Registration
9. Business Permit
10. Certification of Liabilities of parties to compensate for damage to properties and life in case of emergencies and accident
11. Photo documentation of storage facilities and others
12. PCO accreditation certificate and relevant training certificate(s)
13. Quarterly Self-Monitoring Report incorporating the Certificate of
14. Analysis of wastewater samples
15. **Processing fee of Php 2,800 per company**
16. **Amendment fee of Php 2,000**



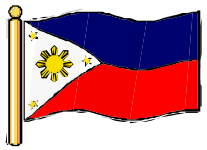
CCO Importation Clearance

DOCUMENTARY REQUIREMENTS

1.Covering Letter
2.Fully-accomplished Importation Clearance Form
3.Discharge Permit/Interconnection Certificate
4.Permit to Operate/Exemption
5.Business Permit
6.PCO accreditation certificate and relevant training certificate(s)
7.Quarterly Self-Monitoring Report incorporating the Certificate of Analysis of wastewater samples
8.Registration of CCO
9.Processing fee of Php 1700 per chemical



Renewal of Importation Clearance (IC) should be done one (1) month prior to Expiration Date



Clarification on the Coverage of Laboratory Facilities under DAO 2007-23 (PCL)

Exemption of laboratory solely using PCL chemicals from securing the PCL Compliance Certificate

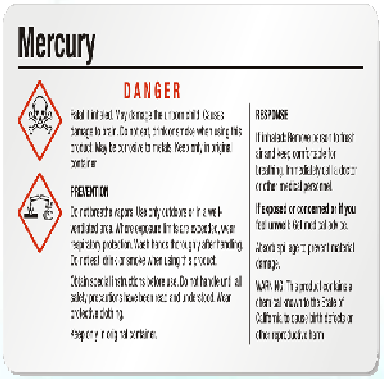
Newly approved chemical policy under EMC no. 2017-007

Clarifications on Permitting Regulations for SQI, PMPIN, PCL and CCOs

- To have efficient and harmonized review of EMB from Region 1 to 17

- This is newly approved chemical policy under EMC No. 2017-009

MERCURY



- A silver metallic liquid available in 3 forms: elemental mercury, Inorganic salts and Organic salts

- Methyl Mercury is the most the most toxic of the 3 classes of mercurial. May cause serious health problems and is a threat to the development of child in utero. Toxic effects on the nervous, digestive and immune system

- Currently, the Regulation for Mercury and Mercury Compounds is being revised to incorporate the mercury added products under the Minamata Convention

MERCURY

- Banning the use of Mercury in artesinal small scale gold mining under the Executive Order No. 79, “Institutionalizing and Implementing Reforms in the Philippines Mining Sector, Providing Policies and Guidelines to Ensure Environmental Protection and responsible Mining in the Utilization of Mineral Resources”
- Revision of the CCO of Mercury and Mercury Compounds

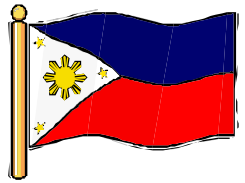
to include the following:

Dental Amalgams shall be phased out five years from the effectivity of this Order

Importation Clearance is per shipment basis

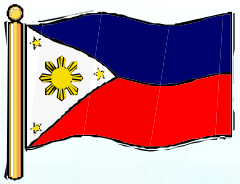
Minamata Convention phase-out schedule

MINAMATA CONVENTION PHASE-OUT SCHEDULE



Mercury–added products	Date after which the manufacture, and import of the product shall not be allowed (phase-out date)
Batteries, except for button zinc silver oxide batteries with a mercury content < 2% and button zinc air batteries with a mercury content < 2%	2022
Switches and relays, except very high accuracy capacitance and loss measurement bridges and high frequency radio frequency switches and relays in monitoring and control instruments with a maximum mercury content of 20 mg per bridge, switch or relay	2022
Compact fluorescent lamps (CFLs) for general lighting purposes that are ≤ 30 watts with a mercury content exceeding 5 mg per lamp burner	2022
Linear fluorescent lamps (LFLs) for general lighting purposes: (a) Triband phosphor < 60 watts with a mercury content exceeding 5 mg per lamp; (b) Halophosphate phosphor ≤ 40 watts with a mercury content exceeding 10 mg per lamp	2022
High pressure mercury vapour lamps (HPMV) for general lighting purposes	2022

MINAMATA CONVENTION PHASE-OUT SCHEDULE



Mercury–added products	Date after which the manufacture, and import of the product shall not be allowed (phase-out date)
Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for electronic displays: (a) short length (≤ 500 mm) with mercury content exceeding 3.5 mg per lamp (b) medium length (> 500 mm and ≤ 1 500 mm) with mercury content exceeding 5 mg per lamp € long length (> 1 500 mm) with mercury content exceeding 13 mg per lamp	2022
Cosmetics (with mercury content above 1ppm), including skin lightening soaps and creams, and not including eye area cosmetics where mercury is used as a preservative and no effective and safe substitute preservatives are available[1]	2022
Pesticides, biocides and topical antiseptics	2022
The following non-electronic measuring devices except non-electronic measuring devices installed in large-scale equipment or those used for high precision measurement, where no suitable mercury-free alternative is available: (a) barometers; (b) hygrometers; (c) manometers; (d) thermometers; (e) sphygmomanometers	2022

LEAD IN PAINT

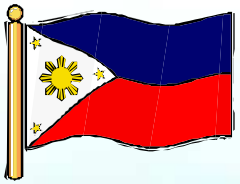
- SAICM Elimination of Lead in paint (90 ppm as threshold limit) is globally advocated due to its adverse effects to children and vulnerable workers when exposed and used as pigment, drying agent or for some intentional use.

- The phase-out of Lead in paint is actively advocated by the DENR , the industry (Philippine Association of Paint Manufacturers) and the civil society (EcoWaste Coalition and IPEN)

- The DENR AO No. 2013-24 sets 3-year phase- out period (2013-2016) for Lead-containing architectural, decorative and household paints and 6-year phase-out period (2013-2019) for industrial paints.

- The DAO 2013-24 provides for the transitory provision for the development of threshold limits to other uses of Lead including those under the industrial uses. This requires capacity building of Regulators at DENR-EMB.

TRANSITORY PROVISION OF DAO 2013-24



- Lead in paints shall be allowed for the next 6 years (2013-2019) as transitional provision provided precautionary labeling is placed in the products:
  - Automobiles paints
  - Industrial and commercial building and equipment maintenance coatings
  - Refinish coatings for industrial equipment
  - Catalyzed coatings for use on radio-controlled model powered airplanes
  - Touch up coatings for appliances and lawn and garden equipment).

Next Steps for the Government (DENR-EMB)

2015

Multistakeholders' Assembly and Consultation

Re: prohibition

2016

Identification of

of Lead compds used in painting

for elimination

2017

Full Implementation of eliminated

Lead compounds

In ADH paints

2018

Preparation of gradual phasing out of lead paints for industrial use

2019

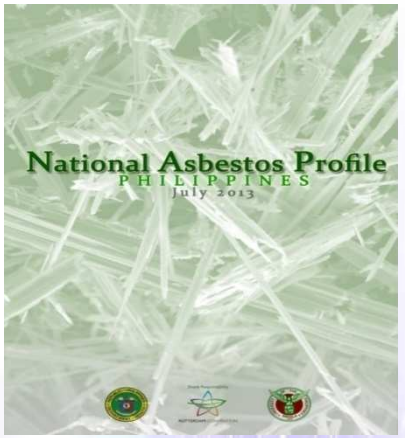
Implementation

of Phase-out of industrial Lead paint

CHRYSOTILE ASBESTOS

- The Chemical Control Order for Asbestos was developed in 1999 and approved in 17 July 2000.

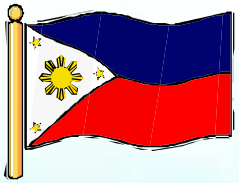
- The country through the multistakeholders' consultation recommended for the inclusion of Chrysotile Asbestos under Annex III of the PIC.



- The current manufacturing standard waschange from 2 fibers/cubic cm to 0.1 fibers/cubic cm.

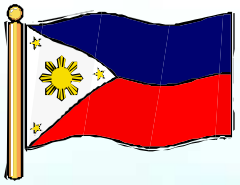
- Code of Practice for Asbestos is for EPTWG review

PUBLIC CONSULTATION & PARTNERSHIPS



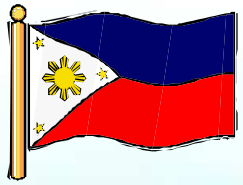
- It is a standard operating procedure to hold public consultation in every proposed chemical policies.
- 3-5 Representatives from industry associations are invited to participate and provide inputs i.e., SPIK, FPI, PAPM, SEIPI, PCAPI, among others.
- There is collaborative mechanism and approach for chemical policy development but requires integrated capability building initiatives for chemical management.

GOVERNMENT AGENCIES THAT CONTROL CHEMCALS IN THE PHILIPPINES



AGENCY REGULATING	CHEMICALS BASED ON USAGE	LAW	Chemical Examples
DENR - EMB	Industrial Chemicals	Republic Act (RA) 6969	Mercury, Formaldehyde, Lead, Benzene etc.
DDB-PDEA	Dangerous Drugs	RA 9165	Ketamine Amineptine
DA - FPA	Fertilizers and Pesticides (Agricultural Use)	PD 1144	Endosulfan Chlorothalonil
DOST – PNRI	Radioactive Chemicals	RA 5207	Cesium Cobalt Iridium
DOH - FDA	Chemicals for human consumption	RA 10620 / PD 881	Cosmetic Products Vitamins
DILG-PNP	Explosives	RA 9516	Aluminum Nitrate Ammonium Acetate Iron Nitrate

DENR-EMB COORDINATION MECHANISM



Inter-Agency Technical Advisory Council (IATAC)

Technical Working Group (TWG)

- Members are comprised of technical representatives from DENR, DOH, DOLE, DTI, DILG, DOF, DOST, DOTr, DA and Office of the President including Non-Government Organizations (NGOs) and Academe
- Provide supports in the review and evaluation of chemical and waste policies including matters on MEAs

Chemical Review Committee (CRC)

- Multidisciplinary experts and partners who review and evaluate new chemicals and chemical substances under the PMPIN process
- The DENR-EMB selected the CRC through a Special Order approved and signed by the EMB Director.

National Steering Committee

- Members are also from government agencies who are invited to provide their expertise and knowledge for Chemical Special Projects i.e., Integrated POPs Projects, BAT/BEP
- Provide comments and recommendations to the proposals related to the projects' implementation

CHEMICAL CONTROL ORDER

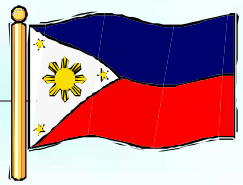
- All CCO importation clearance should be secured and approved prior the actual arrival at the Port of Entry.

- No Importation Clearance shall be issued when the chemical is already at the port of entry as endorsed by the Bureau of Custom (BOC).

- Any special instructions or procedures that is being introduced or done by any respective Offices (other than those stated in harmonization policy under DAO 2015) must inform EMB – CO to ensure uniform implementation of the CCO procedures.

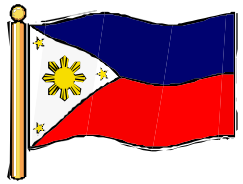

CCO REGISTRATION CERTIFICATE

MEMORANDUM CIRCULAR 2014-001 PHILIPPINE INVENTORY OF CHEMICAL AND CHEMICAL SUBSTANCES



- The Memorandum Circular serves as a guide for manufacturers and importers of chemicals. Manufacturers and importers do not need to notify and secure clearances from the DENR-EMB before they manufacture or import chemicals already included in the PICCS, provided that these chemicals are not in the Priority Chemical List (PCL) or regulated by Chemical Control Order (CCO) or chemicals which are already covered or regulated by other laws or legislation.

- Manufacturers and importers of various chemical substances regulated by Clean Air Act of 1999 e.g. fuel additive still need to notify and secure clearance under the PMPIN process".



OTHER INITIATIVES

Synergies of GHS and Chemical Conventions

International Health Regulation

IFCS

IPCS/ ICSC

SAICM

FAO International Code of Conduct

Basel Convention (Only for recyclables)

Rotterdam Convention

Vienna Convention and the Montreal Protocol

UN Convention on Drugs

Globally-Harmonized System (GHS)

Classification, Labeling and Packaging (CLP) /EU

AARHUS Convention

Stockholm Convention

Chemical Weapons Convention

ILO Conventions

Chemical Platform

EXPRESSIONS OF GHS

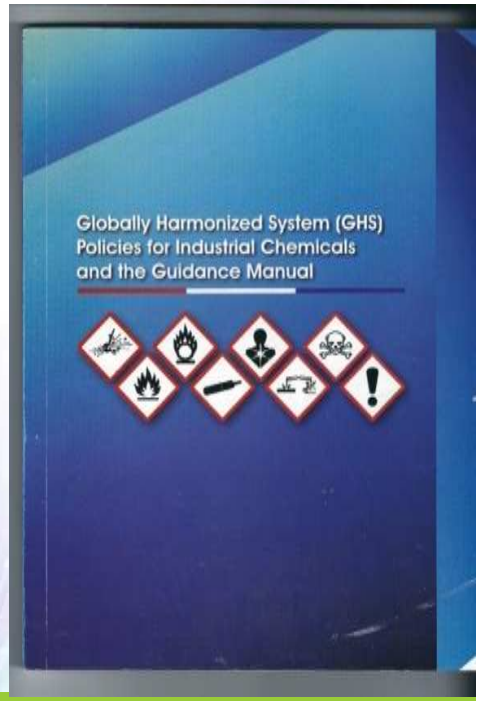
- 16 Sections - Safety Data Sheet (SDS) to be submitted in all permit and clearance applications

- The 6 elements for GHS Labels: substance identifier, symbol, signal word, hazard statement, precautionary statement and supplier.

GHS IMPLEMENTATION

- DAO 2015-09 Rules and Procedures for the Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) in Preparation of Safety Data Sheet (SDS) and Labelling Requirements of Toxic Chemical Substances

- EMB MC 2015-011 on the Guidance Manual contains instructions for the industry to classify and label chemicals and prepare the SDS. It includes the various pictograms and the initial 64 controlled chemicals (pure and compounds) to be labeled.



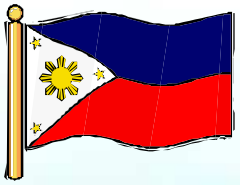
GHS - HIGH VOLUME CHEMICALS

- High Production (Volume) Chemicals are chemicals substances already in commerce which are manufactured or imported or used in the Philippines in quantity more than 500 MT per year.

- The EMB Memorandum Circular No. 2017-010 identified the 232 High Volume Chemicals (HVCs).

- These chemicals are considered to have higher potential exposure (human and environmental) because of their high volumes.

SCREENING INFORMATION DATA SHEET



Basis for assessing high volume chemicals imported or manufactured as to:

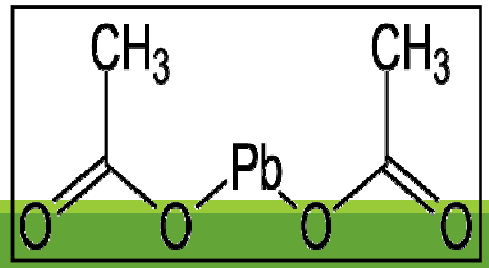
- Acute toxicity
- Chronic toxicity
- Developmental toxicity
- Reproductive toxicity
- Mutagenicity
- Ecotoxicity
- Environmental fate

Screening Information Data Sheet

◀ SIDS is used as reference to check whether the chemicals in the HVCs were included in the list

◀ Assessment of high volume chemicals being imported or manufactured is based on:

- Acute toxicity
- Chronic toxicity
- Developmental toxicity
- Reproductive toxicity
- Mutagenicity
- Ecotoxicity
- Environmental fate



GHS FOR IATA AND IMDG

- The third phase of the GHS implementation is compliance of dangerous chemicals transported via air or ocean

- The transport of these chemicals is controlled and regulated locally and internationally by the IATA regulation and IMDG Code.

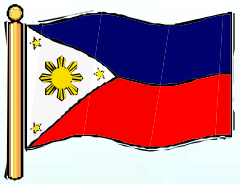
- The Dangerous Goods are classified as: explosives, gases, flammable liquids, flammable solids, oxidizing substances, toxic and Infectious substances, radioactive substances, corrosives and miscellaneous dangerous goods.

2016 TRAINING PROGRAM

- Continuing initiatives for capability and training program on GHS courses. Basic Orientation for GHS Training to all concerned industry sectors and regional Regulators in Luzon, Visayas and Mindanao held from Oct. 2015- July 2016

- This GHS Basic Trainings were conducted in collaboration with Samahan sa Pilipinas ng Industriyang Kimika (SPIK) Core Group.

2017 TRAINING PROGRAM

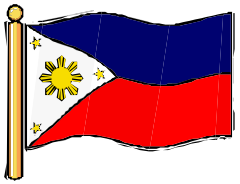


- The EMB Chemical Management Section sustained the yearly capability building and trainings on Updates in Chemical Management for chemical industry and related Sector, Examiners at the Port of Entry and EMB Regulators.

- GHS Intermediate and Advance Training for EMB Regulators in Greenhills, Roxas Blvd. (Midas Hotel) and Palawan in 2017

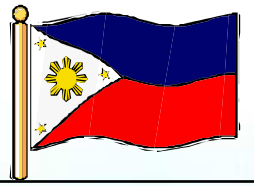
AJCSD – ASEAN JAPAN CHEMICAL SAFETY DATABASE

- AJCSD consisted of Brunei Darussalam, Cambodia, Indonesia, Japan, Laos, Malaysia, Myanmar, Singapore, Thailand, Vietnam
- There was an agreement under AMEICC to update from time to time the countries' database of chemicals.
- The DTI-BOI is the lead agency in the Phil.



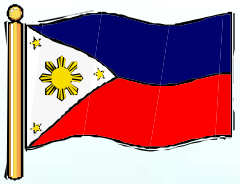
MULTILATERAL ENVIRONMENTAL AGREEMENTS (MEAs) AND CHEMICALS' SPECIAL PROJECTS

MULTILATERAL ENVIRONMENT AGREEMENTS



Montreal Protocol and Vienna Convention	Ozone Depleting Substances (1988 and 1991)
Kyoto Protocol	GHG/ Climate Change (1994/1997)
Rotterdam Convention	Certain Hazardous Chemicals and Pesticides in International Trade (1998/ 2006)
Stockholm Convention	Persistent Organic Pollutants (POPs) – 2001/2004
SAICM & Mercury Initial Assessment (MIA)	QSP in ASGM, National Profile on Chemical Management, (2012 and 2017)
APEC Globally Harmonized System(GHS)	Classification & Labeling of Chemicals (2002/2008)
Minamata Convention	The Philippine is a non party, signed by then DENR Sec. Ramon J.P. Paje dated 10 Oct. 2013 and still for Senate ratification.

STOCKHOLM CONVENTION

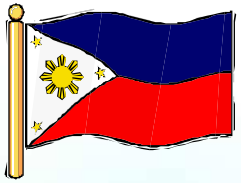


- The DENR-EMB commits to this Convention on legally binding instrument to provide the global framework and to implement an immediate global actions on Persistent Organic Pollutants (POPs).

- World Bank-managed GEF Grant in reducing and phase-out of POPs from the environment in an integrated way i.e., ESM of PCBs, pilot clean-up of contaminated sites and closure of open dumpsite.

- UNIDO-GEF funded the inventory of new pops and updating of National Implementing Plan (NIP in 2014) and the BAT/BEP on Boilers of Coal-Fired Power Plant

ROTTERDAM CONVENTION



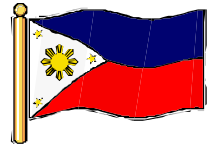
- Rotterdam Convention on the Prior Informed Consent (PIC) Procedure for Certain Hazardous Chemicals and Pesticides is a multilateral treaty to promote shared responsibilities in the importation of hazardous chemicals.
- Annex III of PIC Procedures contains the list of covered toxic chemicals and the DNA (EMB Director) requires an Export Notification from exporting countries. EMB issued a corresponding Explicit Consent.
- The challenge under his Convention is to have yearly records of data/information of chemicals' emergencies and

  incidents that have caused tragic health issues.

  This will be reported and triggered to Final Regulatory

  Action (FRA) of nominated industrial chemicals.

ROTTERDAM CONVENTION



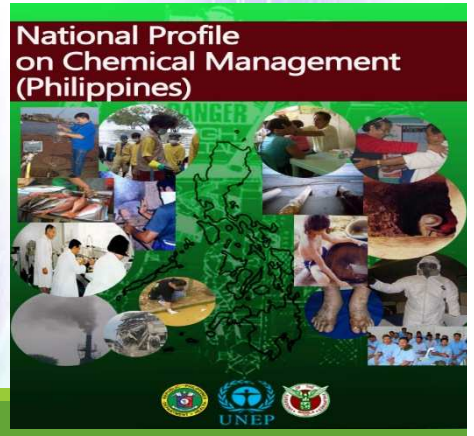
- The Convention is a multilateral treaty to promote shared responsibilities in the importation of hazardous chemicals.

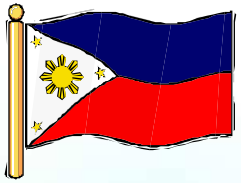
- Annex III of PIC Procedures contains the list of covered toxic chemicals and the DNA (EMB Director) requires an Export Notification from exporting countries. EMB issued a corresponding Explicit Consent. There are cases that Philippines has restricted the importation of Ethylene oxide (only for sterilization of medical equipment).

- The challenge under this Convention is to have yearly records of data/information of chemicals' emergencies and incidents that have caused tragic health issues. This will be reported and triggered to Final Regulatory Action (FRA) of nominated industrial chemicals.

SAICM

- The Philippines (DENR-EMB) commits to "achieve the sound management of chemicals throughout their life-cycle so that, by 2020, chemicals are used and produced in ways that lead to the minimization of significant adverse effects on human health and the environment. Likewise, ensure that our Regulations and other initiatives is influence and align with Sustainable Development Goals (SDGs) through Agenda 2030" to protect health and environment.

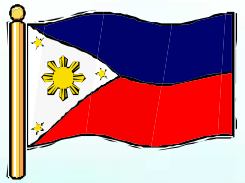




BEST REGULATORY PRACTICES

- Risk-Based assessment of application
- Conduct of Public Consultations

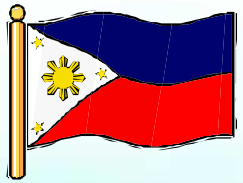
GLOBAL MONITORING PLAN (GMP)



- POPS Monitoring of East Asian Countries (POPsEA) where the Philippines participated in the conduct of monitoring for pesticides (dirty dozen) including now the new POPs.

- The Philippines failed to conduct its own monitoring sometime in 2014 due to purchase of air quality monitoring equipment all over the EMB-Regional Offices. Currently, the AQMS has some changes in their internal structures.

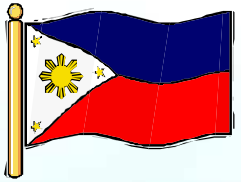
GLOBAL MONITORING PLAN (GMP)2



- **Component 2: Capacity building and analysis of core abiotic matrix (air)** – This component entails training and collection of samples for air. Parallel analysis is done by a reference laboratory and the National Laboratory (EMB-Environmental Research and Laboratory Services (ERLS)).

- Site for the sampling has been selected based on a given criteria and fixture has been installed. Sampling site is at the PAGASA AGROMET station in UP Los Baños. Sampling started this January 2018

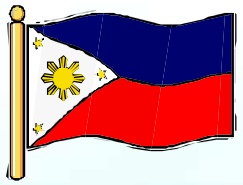
SPECIAL CHEMICAL PROJECT



IMPLEMENTATION OF INTEGRATED PERSISTENT ORGANIC POLLUTANTS (POPS) MANAGEMENT PROJECT

Project Duration:	60 Months
Project Start Date:	December 2011
Project End Date:	June 2018
Grant Amount:	US$ 8.4 Million
Components	Compnents 1 - 5
Implementing Agency:	WORLD BANT
Funding Agency:	Global Environment Facility (GEF)
Executing Agency:	DENR - Environmental Management Bureau
Partner Agencies:	DOST/ DOH /DENR

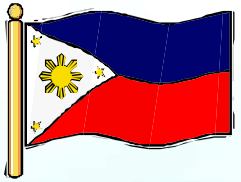
SPECIAL CHEMICAL PROJECT



IMPLEMENTATION OF PCB MANAGEMENT PROGRAMS FOR ELECTRIC COOPERATIVES AND SAFE E-WASTE MANAGEMENT

Project Duration:	60 Months
Project Start Date:	December 2016
Project End Date:	December 2021
Grant Amount:	US$ 6,200,000
Co-Financing*:	US$ 35,868,712
Implementing Agency:	UNIDO
Funding Agency:	Global Environment Facility (GEF)
Executing Agency:	Environmental Management Bureau
Partner Agencies:	NRDC / NEA / ERC / EcoWaste Coalition / IRI / CCTFI /DBM / PHILRECA

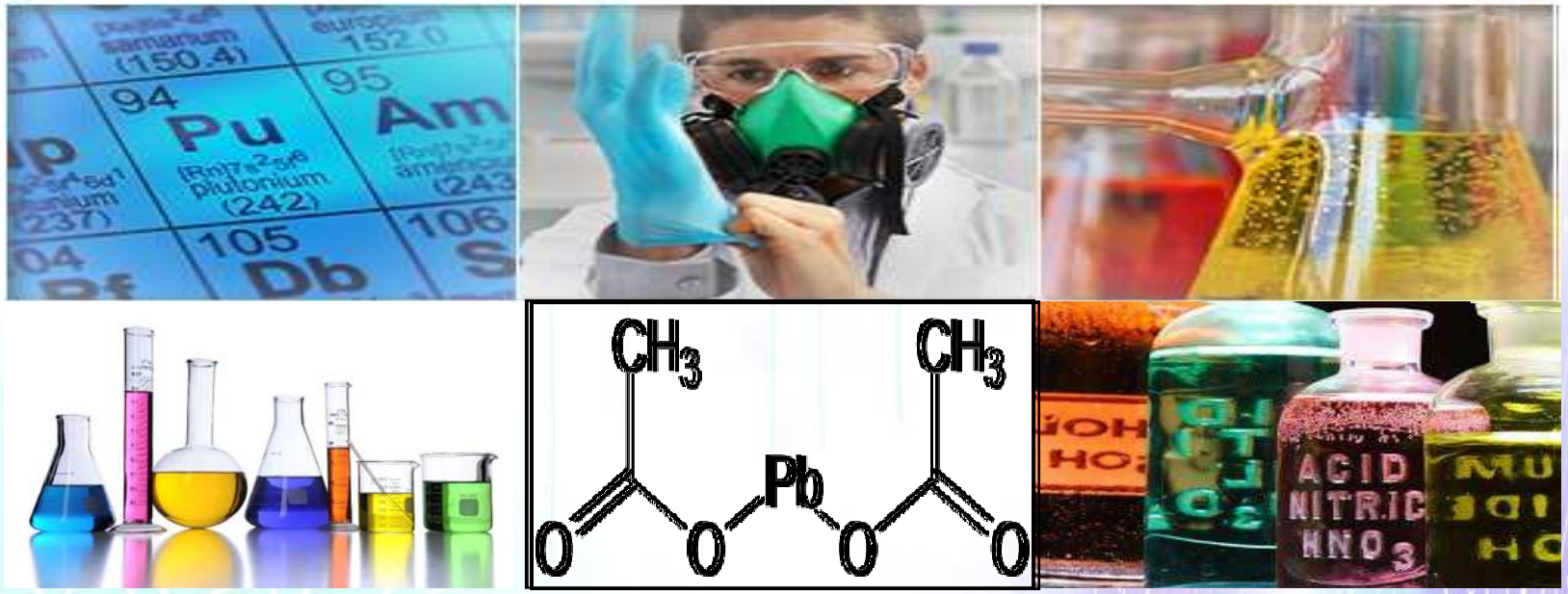
SPECIAL CHEMICAL PROJECT



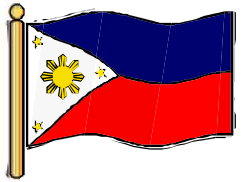
IMPLEMENTATION OF THE POPS MONITORING IN THE ASIAN REGION (GLOBAL MONITORING PROJECT II)

Project Duration:	48 Months
Project Start Date:	December 2017 (SSFA approval)
Project End Date:	December 2021
Grant Amount:	US$3,936,000 (Divided among all participating countries)
Grant Amount (Phils.)	US$ 128,800
Implementing Agency:	UNEP
Funding Agency:	Global Environment Facility (GEF)
Executing Agency:	Environmental Management Bureau
Partner Agencies:	Philippines, Cambodia, Indonesia, Lao PDR, Mongolia, Thailand, Vietnam

CHEMICAL MANAGEMENT POLICIES

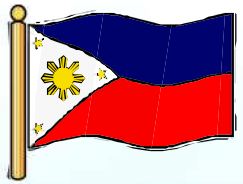


CHEMICAL POLICIES



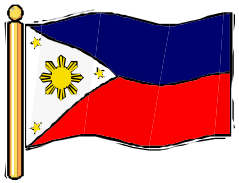
DAO 2005-27	Revised Priority Chemical List
DAO 2007-23	Prescribing Additional Requirements for the Issuance of the Priority Chemical List (PCL) Compliance Certificate
DAO 2013-24	Chemical Control Order for Lead and Lead Compounds
DAO 2013-25	Revised Regulations on the Chemical Control Order for Ozone Depleting Substances (ODS)
EMB MC 2014-001	Philippine Inventory of Chemicals and Chemical Substances
EMB MC 2014-003	Supplemental Guidelines for the DENR AO 2007-23 (Prescribing Additional Requirements for the Issuance of the Priority Chemical List (PCL) Compliance Certificate
EMB MC 2014-010	Guidelines for the Disclosure of Confidential Business Information (CBI) and Monitoring of Small-Quantity Importation (SQI), and Pre-Manufacture Pre-Importation Notification (PMPIN)
DAO 2015-09	Rules and Procedures for the Implementation of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) in Preparation of Safety Data Sheet (SDS) and Labelling Requirements of Toxic Chemical Substance

CHEMICAL POLICIES



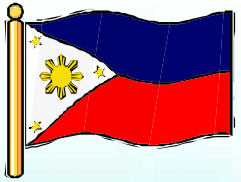
EMB MC 2015-002	Harmonization of Registration Forms, Issued Certificates and Procedures for Chemical Control Orders (CCOs), and Small Quantity Importation (SQI)
EMB MC 2015-004	Clarifications to the Chemical Control Order (CCO) for Polychlorinated Biphenyls (PCBs)
EMB MC 2015-005	Clarifications on the Prohibited Uses of Lead and Lead Compounds under DAO 2013-24, “Chemical Control Order (CCO) for Lead and Lead Compounds”
EMB MC 2015-007	Technical Guidance Document on Polychlorinated Biphenyls (PCBs) Management
EMB MC 2015-011	Guidance Manual for DAO 2015-09 (Rules and Procedures for the Implementation of the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals in Preparation of Safety Data Sheet (SDS) and Labelling Requirements of Toxic Chemical Substances)

CHEMICAL POLICIES



EMB MC 2016-003	Implementation of Online Processing of Priority Chemical List (PCL) and Premanufacture Preimportation Notification (PMPIN) Under the Title II of DENR AO 29, Series of 1992, of RA 6969
EMB MC 2016-010	Clarification on the Prohibition of Paints with Lead and Lead Compounds Used for Children's Toys and Related Products
EMB MC 2016-011	Instructions on the Implementation and Enforcement of the Devolved Functions Under the DENR Memorandum Circular 2002-12
EMC 2017-007	Clarification on the Coverage of Laboratory Facilities under DAO 2007-23 (PCL)
EMB MC 2017-009	Clarifications on Permitting Regulations for Small Quantity Importation (SQI), Pre-Manufacture Pre-Importation Notification (PMPIN), Priority Chemical List (PCL) and Chemical Control Orders (CCO)
EMB MC 2017-010	Clarifications on Permitting Regulations for Small Quantity Importation (SQI), Pre-Manufacture Pre-Importation Notification (PMPIN), Priority Chemical List (PCL) and Chemical Control Orders (CCO)

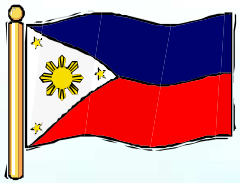
Priority Chemical List (PCL)



No.	Chemical Abstract Services No.	Philippine Inventory of Chemicals and Chemical Substances (PICCS) Name	Chemical Abstract Services (CAS)/ INDEX Name
1.	108-90-7	1,4-CHLOROBENZENE	Benzene,chloro-
2.	106-93-4	1,2-DIBROMOETHANE	Ethane,1,2-dibromo
3.	95-50-1	0-DICHLOROBENZENE	Benzene,1,2-dichloro
4.	106-46-7	1,4-DICHLOROBENZENE	Benzene,1,4-dichlro-
5.	107-06-2	1,2-DICHLOROETHANE	Ethane, 1,2-dichloro-
6.	122-66-7	1,2 DIPHENYLHYDRAZINE	Hydrazobenzene
7.	108-46-3	3-HYDROXYPHENOL	1,3-Benzenediol
8	7647-18-9	ANTIMONY PENTACHLORIDE	Antimony chloride
9.	7440-38-2	ARSENIC COMPOUNDS	Arsenic
10.	1332-21-4	ASBESTOS*	Asbestos
11.	71-43-2	BENZENE	Benzene
12.	7440-41-7	BERYLLIUM COMPOUNDS	Beryllium
13.	7440-43-9	CADMIUM COMPOUNDS	Cadmium
14.	56-23-5	CARBON TETRACHLORIDE**	
15.	General Name	CHLORINATED ETHERS	
16.	General Name	CHLOROFLUORO CARBONS**	
17.	67-66-3	CHLOROFORM	Trichloromethane
18.	76-06-2	CHLOROPICRIN	Methane, trichloronitro
19.	18540-29-9	CHROMIUM COMPOUNDS	Chromium
20.	57-12-5	CYANIDE COMPOUNDS*	Cyanide
21.	64-67-5	DIETHYL SULFATE	Sulfuric acid,diethyl ester
22.	106-93-4	ETHYLENE DIBROMIDE	1,2 Dibromoethane
23.	75-21-8	ETHYLENE OXIDE	Oxirane
24.	111-30-8	GLUTARALDEHYDE	Pentanedial
25.	50-00-0	FORMALDEHYDE	Formaldehyde
26.	9002-83-9	HALONS**	Ether, chlorotrifluoro-homopolymer
27.	118-74-1	HEXACHLOROBENZENE	Benzene, hexachloro
28.	67-72-1	HEXACHLOROETHANE	Ethane, hexachloro
29.	302-01-2	HYDRAZINE	Hydrazine
30.	7439-92-1	LEAD COMPOUNDS	Lead
31.	149-30-4	MBT	2(3H)-Benzothiazolethione
32.	594-42-3	MERCAPTAN, PERCHLOROMETHYL	Methanesulfenyl chloride, trichloro-
33.	7439-97-6	MERCURY COMPOUNDS*	Mercury
34.	74-87-3	METHYL CHLORIDE	Methane, chloro

No.	Chemical Abstract Services No.	Philippine Inventory of Chemicals and Chemical Substances (PICCS) Name	Chemical Abstract Services (CAS)/ INDEX Name
35.	75-09-2	METHYLENECHLORIDE	Methylene,dichloro
36.	2385-85-5	MIREX	
37.	87-86-5	PENTACHLOROPHENOL	Phenol, pentachloro
38.	127-18-4	PERCHLROETHYLENE	Ethene,tetrachloro
39.	108-95-2	PHENIC ACID	Phenol
40.	75-44-5	PHOSGENE	Carbonyl chloride/ Carbonicdichloride
41.	85-44-9	PHTHALIC ANHYDRIDE	1,3 Isobenzofurandione
42.	59536-65-1	POLYBROMINATED BIPHENYLS	Fire Master BP6
43.	1336-36-3	POLYCHLORINATED BIPHENYLS*	1,1-Biphenyl chloroderivatives
44.		1,1,1-TRICHLOROETHANE**	
45.	79-01-6	TRICHLOROETHYLENE	Ethene,trichloro
46.		TRIBUTYLTIN	
47.	7782-49-2	SELENIUM	Selenium
48.	75-01-4	VINYL CHLORIDE	Chloroethylene

PCL CHEMICALS TO BE CONTROLLED

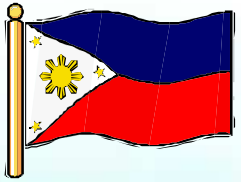


DENR Administrative Order
No. 2005 - 05

1. Cadmium Compounds (Cd);
2. Lead Compounds (Pb);
3. Arsenic Compounds (As);
4. Vinyl Chloride (C_2H_3Cl);
5. Benzene (C_6H_6); and
6. Chromium (Cr_6).

- Chemical Control Order (CCO) for Lead and Lead Compounds has been issued under DAO 2013-24
- CCO for Arsenic Compounds is for DENR Policy Review
- CCO for Chromium6 is for EMB Policy TWG Review
- CCO for Cadmium Compounds is being formulated.

ADDITIONAL CHEMICALS TO BE INCLUDED IN THE PCL

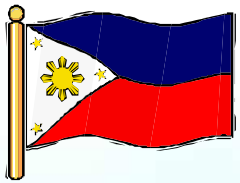


- About 55 additional toxic chemicals will be added in the 3rd version of the Priority Chemical List (PCL)

- There around 40 added chemicals from the OECD, REACH, NITE classifications and regulations of other countries.

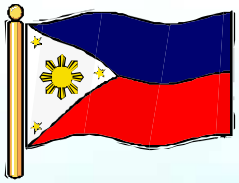
- On-going consultation and discussion of criteria used for this PCL policy with ICP, industry associations.

SAMPLES OF HVC FOR PCL INCLUSION



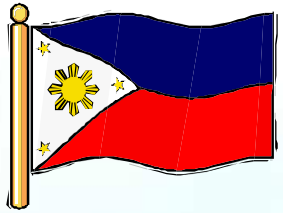
IUPAC/CAS Name	CAS Number	GHS Classification (NITE)	GHS Classification (CLP-ECHA)
BORAX DECAHYDRATE/ Disodium tetraborate decahydrate	1303-96-4	Acute oral toxicity Cat. 5 Skin corrosion/irritation Cat. 2 Serious eye damage/irritation Cat. 2 Reproductive toxicity Cat. 2 STOT SE Cat. 1 (kidney, nervous system, respiratory system STOT RE Cat. 1 (kidney, nervous system, respiratory) and Cat. 2 (testis)	Serious eye damage/irritation Cat. 2 Reproductive toxicity Cat. 2
HYDROCHLORIC ACID/ Hydrochloric acid	7647-01-0	High pressure liquid gas Acute oral toxicity Cat. 3 Acute inhalation toxicity Cat. 3 (gas) and Cat. 2 (dust/mist) Skin corrosion/irritation Cat. 1 Serious eye damage/irritation Cat. 1 Respiratory sensitization Cat. 1 STOT SE Cat. 1 (respiratory system) STOT RE Cat. 1 (respiratory system, tooth) Acute aquatic toxicity Cat.	High pressure liquid gas Acute oral toxicity Cat. 4 Acute inhalation toxicity Cat. 3 (gas) and Cat. 2 (dust/mist) Skin corrosion/irritation Cat. 1 Serious eye damage/irritation Cat. 1 STOT SE Cat. 3 (respiatory system)

SAMPLES OF HVC FOR PCL INCLUSION



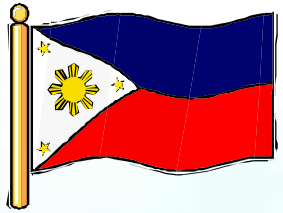
IUPAC/CAS Name	CAS Number	GHS Classification (NITE)	GHS Classification (CLP-ECHA)
PROPYLENE OXIDE/ Oxirane, methyl-	75-56-9	Flammable liquid Cat. 1 Acute oral toxicity Cat. 4 Acute dermal toxicity Cat. 3 Acute inhalation toxicity Cat. 4 (vapor) Skin corrosion/irritation Cat. 2 Serious eye damage/irritation Cat. 1 Skin sensitization Cat. 1 Germ cell mutagenicity Cat. 2 Carcinogenicity Cat. 2 Reproductive toxicity Cat. 2 STOT SE Cat. 3 (respiratory tract irritation, narcotic effect) Acute aquatic toxicity Cat. 3	Flammable liquid Cat. 1 Acute oral toxicity Cat. 4 Acute dermal toxicity Cat. 3 Acute inhalation toxicity Cat. 3 Serious eye damage/irritation Cat. 1 STOT SE Cat. 3 (respiratory irritation) Gem cell mutagenicity Cat. 1 Carcinogenicity Cat. 1

EVALUATION OF CRITERIA



- Identification of Health and Environmental hazards from reliable sources:
  - NITE from Japan METI
  - ECHA from EU
- Chemicals with any of the following hazards are selected
  - Acute Toxicity
  - Carcinogenicity
  - Mutagenicity
  - Reproductive Toxicity
  - STOT Repeated Exposure
  - Chronic Aquatic Toxicity
  - Skin and Respiratory Sensitization

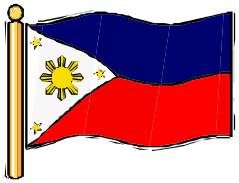
MOVING FORWARD



DENR- EMB (Regulators) would need Capacity Building and Training for the following:

- Globally Harmonized System (GHS) in industrial Mixtures
- Use of read across method in determining the physicochemical properties, toxicity and ecotoxicity.
- Risk Assessment of chemicals used in the evaluation and regulation of chemicals.
- Polymers and Polymers of Low Concern (PLC)
- Strengthen Implementation and Enforcement of RA 6969

Thank You Very Much for Listening!



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Any Questions?