



# National Response to Ozone Layer Depletion

Mr. Onofre P. Escota  
Project Evaluation and Monitoring Officer  
DENR EMB Philippine Ozone Desk

# Outline

- Montreal Protocol overview
- ODS Phase-out schedule for Philippines
- Uses of HCFCs
- Chemical Control Order of ODS  
HCFC Consumption Pattern
- Inspection & Investigation Conducted for  
Unregistered ODS and ODS alternatives
- HCFC Phase-out Management Plan (HPMP)
- EMB Memorandum Circular regulating ODS  
alternatives
- HFCs Consumption Pattern
- Informal Prior Inform Consent (iPIC)



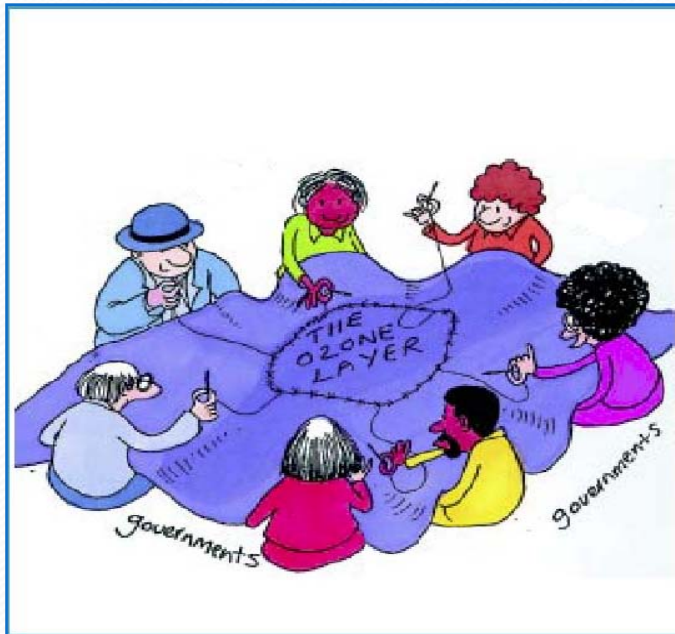


# Main MP obligations

Implementation of activities supported by the Multilateral Fund (MLF):

- Phase-out of ODS;
- Capacity building and training for handling ODS alternatives in the servicing, manufacturing, and production sectors;
- Institutional strengthening;
- Licensing system for import-export of ODS;
- Reporting of ODS consumption and country program;
- Development of national strategies to phase-out ODS.

# Montreal Protocol on Substances that Deplete the Ozone Layer



- On 16 Sept 1987, the Montreal Protocol was signed into a treaty
- The Philippines became a signatory to the Montreal Protocol on 14 September 1988
- Ratified the Vienna Convention and MP on 21 Mar 1991
- Ratified all four amendments by 2006
- Under MP, PH is Article 5 country, defined as a developing country whose annual consumption of controlled substances is less than 0.3 kg per capita.





## Objective of the Montreal Protocol (MP)

- Gradually phase-out the consumption of Ozone Depleting Substances (ODS)
  - Consumption = import – export + production

Note: Only virgin substances are counted in the consumption; not included used and recycled ODS



Since the Philippines is not a producer of Ozone Depleting Substances (ODSs)

- demands of these substances are met by imports from other countries
- phase-out of these substances pertains mainly to controlling ODS importation

The Custom Officers' systematic monitoring of all ports of entry into a country helps to control legal imports and to prevent illegal imports of ODS through mislabeling or other false documentation.





***Memorandum of Understanding between the DENR and Bureau of Customs was signed on July 24, 2002 for high-level co-operation and commitment in controlling the illegal trade of ODS.***

## MEMORANDUM OF UNDERSTANDING

### KNOW ALL MEN BY THESE PRESENTS:

This MEMORANDUM OF UNDERSTANDING (MOU) is entered into by and between:

The Department of Environment and Natural Resources, represented herewith by the ENVIRONMENT MANAGEMENT BUREAU created by virtue of Executive Order No. 192 with offices at EMB Bldg., DENR Compound, Visayas Avenue, Diliman, Quezon City, represented by its Secretary, Hon. **HEHERSON T. ALVAREZ**, herein referred to as DENR-EMB;

AND

The Department of Finance, represented herewith by the BUREAU OF CUSTOMS, with offices at the Port Area, Manila represented by its Commissioner, Undersecretary **ANTONIO M. BERNARDO**, herein referred to as BoC:

### WITNESSETH:

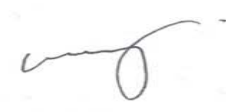
WHEREAS, under Republic Act 6969 (Toxic and Hazardous and Nuclear Wastes Control Act of 1999) and Resolution No. 25 dated March 10, 1993 of the Senate of the Philippines ratifying the Montreal Protocol on Substances that Deplete the Ozone Layer, the DENR-EMB has the legal mandate to regulate, restrict or prohibit the import, export, use, manufacture, transport, processing, storage, possession or sale of ozone-depleting substances to abate or minimize their risks and hazards to the stratospheric ozone, public health, and the environment.

WHEREAS, there is an urgent need to clarify the respective responsibilities of, and establish the working relationship between, BoC and the DENR-EMB in relation to the provisions of RA 6969 and the Montreal Protocol on Substances that Deplete the Ozone Layer as ratified by the Senate.

NOW, THEREFORE, in view of the foregoing premises, the DENR-EMB and the BoC hereby stipulate and agree as follows:

#### 1. The DENR-EMB, shall:

- a) Issue rules and regulations relative to the import, export, transport, processing, storage, possession or sale of ozone-depleting substances and its alternatives;
- b) Issue Pre-Shipment Importation Clearance to registered/authorized importers of ODS and its alternatives as basis for BoC's approval of entry;
- c) Support the BoC in obtaining resources such as equipment, manpower\* training, expertise, information, and others, in order to capacitate the BoC and assure proper enforcement/implementation of appropriate rules and regulations;
- d) Draft, together with the BoC, a Customs Handbook for perusal in the enforcement and implementation of any endeavor that the parties may pursue in furtherance of the terms of this agreement;
- e) Upon advice of BoC, monitor/validate "suspicious" shipment after it has left the BoC.





- f) Designate the Philippine Ozone Desk and the Environmental Quality Division of EMB as official liaison to the BoC.

2. The BoC, shall:

- a) Implement/enforce relevant rules and regulations relative to the import, export, transport, processing, storage, possession or sale of ozone-depleting substances and its alternatives;
- b) Draft, together with the DENR-EMB, a Customs Handbook for perusal in the enforcement and implementation of any endeavor that the parties may pursue in furtherance of the terms of this agreement;
- c) Provide to DENR-EMB import data of ODS and its alternatives on a semi-annual basis;
- d) Notify the DENR-EMB of any "suspicious" shipment/s encountered;
- e) Designate Environmental Protection Unit (EPU) under the Office of the Deputy Commissioner for Intelligence and Enforcement Group (IEG) to be in-charge of implementing the MOU and act as the official liaison to the DENR-EMB through the Philippine Ozone Desk.

For the efficient and effective implementation of this Agreement, an EMB-BoC Liaison Committee shall be created to ensure adequate coordination, cooperation, information sharing, and problem solving between the two agencies. Membership of the liaison committee shall be decided by the head of the two agencies. The Committee shall meet at least twice a year, or as may be requested by either party.

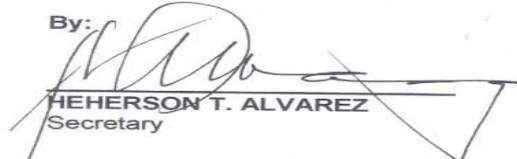
This agreement shall be binding without prejudice to further and subsequent laws, orders or regulations that may be passed in relation to the forgoing subject matter of this undertaking.

This Agreement shall take effect upon its execution by the Parties. Any modification or amendment of the terms and conditions of this Agreement shall be mutually agreed upon by the parties and shall be made in writing duly signed by the Parties.



IN WITNESS WHEREOF, the parties hereby set their hands this 24<sup>th</sup> day of July year Two Thousand and Two at the **Heritage Hotel, Pasay City**.

**Department of Environment  
and Natural Resources  
Environmental Management Bureau**

By:


  
**HEHERSON T. ALVAREZ**  
Secretary


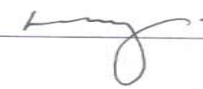
Signed in the Presence of:

**Department of Finance  
BUREAU OF CUSTOMS**

By:

  
**ANTONIO M. BERNARDO**  
Commissioner

## ACKNOWLEDGEMENT

REPUBLIC OF THE PHILIPPINES  
QUEZON CITY


}  
} S.S.

Before me on the 29th day of July 2002 personally appeared  
**HEHERSON T. ALVAREZ** with CTC No. 00496785 issued on 1-07-02  
at MANILA and **ANTONIO M. BERNARDO** with CTC No. 11947810  
issued on 3-11-02 at MAKATI CITY, known to me to be the same persons  
who executed the foregoing undertaking and acknowledging to me that the same  
is of their own free act and will.

WITNESS MY HAND AND SEAL.

Doc No. 370  
Page No. 75  
Book No. 1  
Series of 2002

NOTARY PUBLIC

  
ATTY. ROSANNE B. TURINGAN  
NOTARY PUBLIC  
UNTIL DEC 31, 02  
PTR NO. 29613802-1-16-02  
IBF NO. 107747




# Controlled Substances of the Montreal Protocol

Annex	Group	Substance	No. of Species
Annex A	Group I	Chlorofluorocarbons (CFCs)	5
	Group II	Halons	3
Annex B	Group I	Other fully halogenated CFCs	10
	Group II	Carbon tetrachloride	1
	Group III	1,1,1-trichloroethane (methyl chloroform)	1
Annex C	Group I	Hydrochlorofluorocarbons (HCFCs)	40
	Group II	Hydrobromofluorocarbons (HBFCs)	34
	Group III	Bromochloromethane	1
Annex E	Group I	Methyl bromide	1

# PH Achievements in Ozone Layer Protection

- Establishment of Philippine Ozone Desk
- Policy and regulatory framework
- 92 ODS projects approved
- Phase-out of all ODS by 2010, except for HCFCs and MeBr for QPS





## Montreal Protocol's ODS Phase out Schedule for Article 5 Countries (in percent)

Name of ODS	Base Level	1999	2002	2003	2005	2007	2010	2013	2015	2020	2025	2030	2040
CFC (Annex A)	1995-1997	FRZ			50	85	100						
CFC (Annex B)	1998-2000			20		85	100						
Halon	1995-1997		FRZ				100						
Methyl Bromide (Non-QPS only)	1995-1998		FRZ		20				100				
Methyl Chloroform (1, 1, 1 TCA)	1998-2000				30				100				
Carbon Tetrachloride	1998-2000				85		100						
HCFC	2009-2010							FRZ	10	35	67.5	97.5	100

## ODS Phase-out Schedule: Status of Compliance of Philippines

Name of ODS	Base Level	1999	2002	2003	2005	2007	2010	2013	2015	2020	2025	2030	2040
CFC Annex A PHASED OUT (2010)													
CFC Annex B PHASED OUT (2010)													
Halon PHASED OUT (1999)													
MB PHASED OUT (2009)													
1, 1, 1 TCA PHASED OUT (1996)													
CTC PHASED OUT (1996)													
HCFC	2009-2010							FRZ	10	35	67.5	97.5	100



# Where are HCFCs and other ODS used?

# Fumigants







# COMMON USES OF HCFCs

- Cooling Agent (HCFC 22 and HCFC 123)
- Cooling Agent; Fire Extinguishing Agent (HCFC 123)
- Foam Blowing Agent (HCFC 141b, HCFC 142b)
- Cleaning Agent/Solvent; Flushing Agent in burnt out aircon lines (HCFC 141b, HCFC 225)

# HCFCs



- HCFC-22 or Chlorodifluoromethane



- HCFC-123 or Dichlorotrifluoroethane



- HCFC-141b or Dichlorofluoroethane



- HCFC-225



# Uses of HCFC:



# **DAO 2013-25 Revised Regulations on CCO for ODS Overview**

**Precursor: DAO 2004-08 Chemical Control Order for Ozone Depleting Substances (ODS)**

**Rationale for revising DAO 2004-08:**

- **update the phase-out status of controlled substances covered by the Montreal Protocol on Substances that Deplete the Ozone Layer**
- **reflect the requirements for the phase-out of hydrochlorofluorocarbons (HCFCs)**
- **provide the continuing legal basis for ODS phase-out in the country**



## DAO – Section 2: Objectives

➤ This Order aims to:

**2.1** Strengthen the legal infrastructure to support the implementation of the Philippine Hydrochlorofluorocarbon (HCFC) Phase-out Management Plan (HPMP); and

**2.2** Sustain the phase-out of other ozone depleting substances.

## DAO Section 5: Ban on Importation of ODS

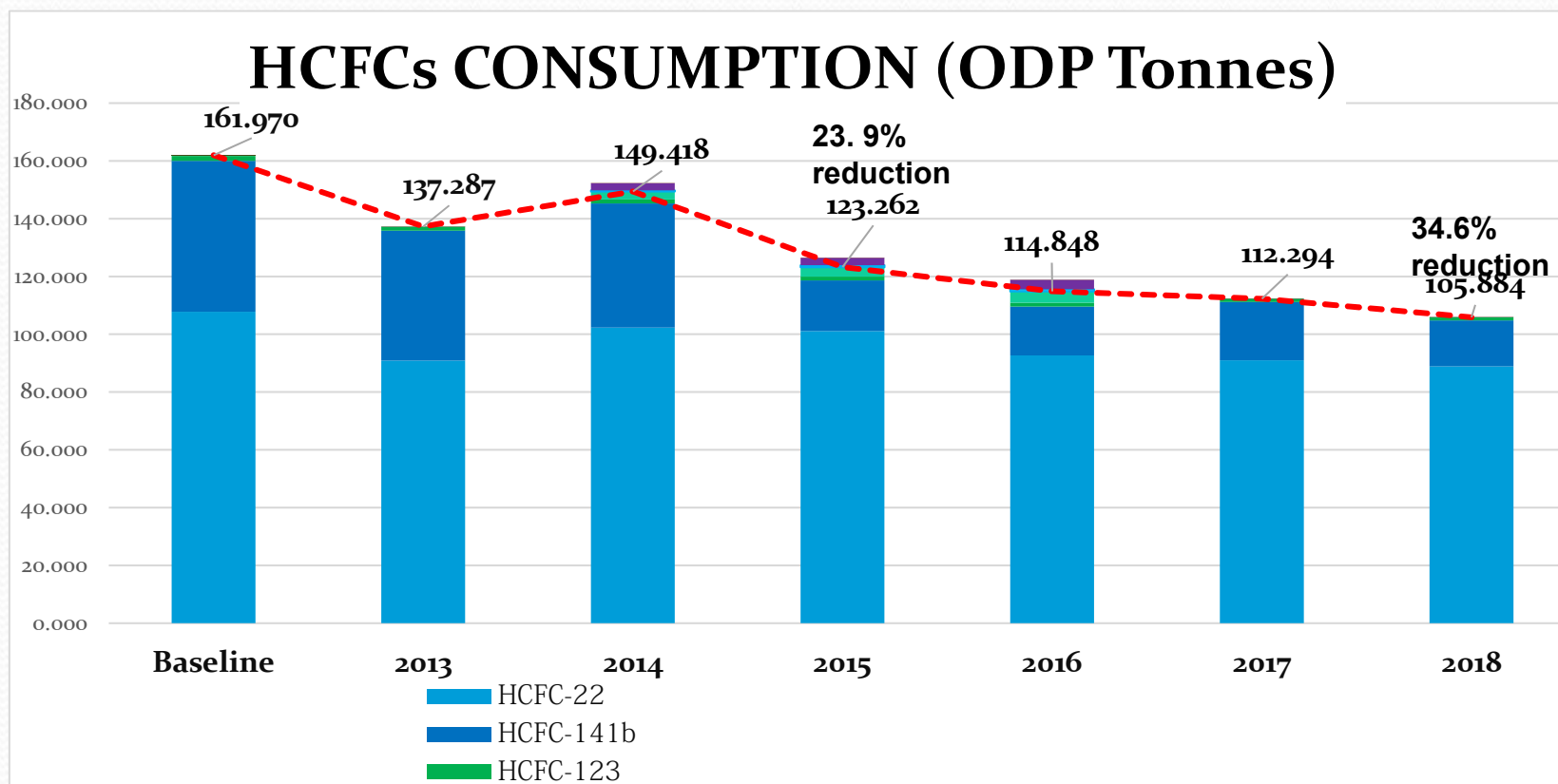
Category	ODS	Date of import ban
Annex A, Group I	CFCs	01 January 1998
Annex A, Group II	Halons	01 January 1999
Annex B, Group I	Other CFCs	01 January 1999
Annex B, Group II	CCl <sub>4</sub>	01 January 1996
Annex B, Group III	TCE	01 January 1996
Annex E	Non-QPS methyl bromide	01 January 2009
	CFC-11 CFC-12	01 January 2005 01 January 2010



## DAO – Section 6: Phase-out Schedule and Control of Importation of ODS (HCFCs)

Date	Import Reduction	Sector affected/Remarks
01 Jan 2013	Recorded baseline shall not be exceeded	
01 Jan 2015	10%	Foam manufacturing (HCFC-141b)
01 Jan 2020	35%	Manufacturing of refrigeration and air-conditioning equipment (HCFC-22)
01 Jan 2025	67.5%	Chillers and fire extinguishing (HCFC-123)
01 Jan 2030	97.5%	All import of HCFC blends prohibited
2030-2039	100%	2.5% per annum allowed for the servicing sector
01 Jan 2040		All import of HCFCs and HCFC blends prohibited

# HCFC CONSUMPTION (ODP TON)







## DAO – Section 6: Phase-out Schedule and Control of Importation of ODS (HCFCs)

An **annual import quota allocation system** shall be implemented by the Department through the Bureau.

The **annual import quota is non-cumulative**, thus, any remainder of the quota allocation for a particular substance is deemed consumed at the end of the calendar year.

# **DAO – Section 7: Registration and Renewal of Registration of Importers of ODS**

Any person who imports ODS for any industry or activity must register with the Department through the Bureau

Documentary requirements for the issuance of the Certificate of Registration

A Certificate of Registration issued by the Department through the Bureau is valid only for the calendar year when it was obtained. An application for the renewal of registration for every succeeding period prior to any importation must be submitted within the last thirty (30) days of the current calendar year.

**ODS On –Line Permitting System (OPMS)**

**Website : [opms.emb.gov.ph](http://opms.emb.gov.ph)**




# Online Permitting and Monitoring System

EMB Online Permitting an... X +

Environmental Management Bure... (PH) | https://opms.emb.gov.ph/accounts/login/

OPMS Applications Help Forgot password? Recognized Labs

Email Password Sign in




## Online Permitting and Monitoring System

Environmental Management Bureau  
Department of Environment and Natural Resources

Register

For technical concerns, please email us at support@emb.gov.ph or call (02) 920-2232.



# Example of Application Form for COR for ODS



Republic of the Philippines  
Department of Environmental and Natural Resources  
**ENVIRONMENTAL MANAGEMENT BUREAU**  
Central Office  
EMB Building, DENR Compound, Visayas Ave., Quezon City

**APPLICATION FOR REGISTRATION FOR THE IMPORTATION OF  
OZONE-DEPLETING SUBSTANCES AND ALTERNATIVE CHEMICAL  
SUBSTANCES**

Page 1 of 2

## A. GENERAL INFORMATION

I. Applicant's Name ALEXANDER CHUA

II. Business Name THERMO ENGINEERING SUPPLY CORPORATION

Business Address 57 F. Pasco Ave. Santolan CITY OF PASIG NCR, SECOND DISTRICT  
Philippines

Telephone No (02) 645 5441

Fax No (02) 681 7212

SEC/DTI Registration No 43962 / 00044172

ECC / CNC Number ECC-NCR-0205-0164 (Amending ECC-NCR 2002-05-15-164-120)

Profile of Business Direct importer and distributor of Refrigerants and A/C supplies.

III. Contact Person

Name RENATO BERNARDO

Position Pollution Control Officer

Mobile No 0922-8040865

Tel No (02) 645 5441

Seminar/Training	Date	Conducted by
Technology forum on alternatives to ODS for Ozone Layer and Climate Protection	Sept. 16, 2016	DENR EMB POD

## IV. Type of Importer

☒ Importer - Distributor

Storage Facility Address 2A M. De Leon St. , Santolan, CITY OF PASIG, NCR, SECOND DISTRICT,  
Philippines

Telephone No (02) 645 5441

Fax No (02) 681 7212

Storage Size 1000

## B. DATA ON SUBSTANCE SUBJECT TO IMPORTATION

V. Substance Name R-141b

Substance Intended Use Cleaning Agent

Blend Generic Name Dichlorofluoroethane or HCFC-141b

Page 2 of 2

## Chemical Composition

Percent	Chemical Name	Formula
100	Dichlorofluoroethane (HCFC-141b)	C2H3Cl2F

## C. CHEMICAL HANDLER

VI. Name ALBIN V. MANUEL

Position Safety Officer

Mobile No 0947-6277776

Telephone No (02) 645 5441

Seminar/Training	Date	Conducted by
Basic Occupational Safety and Health	March 25, 2018	RBA-Env't., Health & Safety Consultancy & Training Solution

## D. NOTARIZED CERTIFICATION

THE UNDERSIGNED CERTIFY THAT THE INFORMATION PROVIDED IN THIS FORM IS TRUE AND ACCURATE.

NAME ALEXANDER G. CHUA

DESIGNATION / POSITION Import and Procurement Manager

SIGNATURE [Signature] DATE Jan. 3, 2019

I acknowledge that this application form is a legally binding document, and I declare, under the penalties of perjury, that the same has been accomplished in good faith, verified by me, and, to the best of my knowledge and belief, is true and correct pursuant to the regulations issued under authority thereof.

SUBSCRIBED AND SWORN TO BEFORE ME  
THIS JAN 08 2019 AT PASIG CITY

(Notary Public)

Doc. No. 110  
Page No. 23  
Book No. 180  
Series Of 2019

ATTY. ARLES B. MIRANDILLA  
Appointment No. 60  
Notary Public for the Cities of  
Pasig, Taguig and San Juan and  
the Municipality of Pateros  
RPL No. 58826  
PTR No. 2714261/ Feb. 1, 2017  
IRP No. 1071521/ Feb. 1, 2017  
Until December 31, 2017  
G/F AD Center Square Bldg.  
Santolan, Pasig City



# Example of Certificate of Registration for ODS



Republic of the Philippines  
Department of Environmental and Natural Resources  
**ENVIRONMENTAL MANAGEMENT BUREAU**  
Central Office  
EMB Building, DENR Compound, Visayas Ave., Quezon City  
Tel No: 920-2253  
mail@emb.gov.ph

Registration Certificate Number  
**ODS-IR-OL-19-00036-B**

EMB Copy

## CERTIFICATE OF REGISTRATION

(FOR THE IMPORTATION OF OZONE-DEPLETING SUBSTANCES AND ALTERNATIVE CHEMICAL SUBSTANCES)

Pursuant to the Montreal Protocol on Substances that Deplete the Ozone Layer and by virtue of the authorities vested by Republic Act 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990), and Section 30 of Republic Act 8749 (The Philippine Clean Air Act of 1999) as implemented by the DENR Administrative Order 25, Series of 2013 also known as the Revised Regulations on the Chemical Control Order (CCO) for Ozone Depleting Substances (ODS), the applicant:

COMPANY NAME

**THERMO ENGINEERING SUPPLY CORPORATION**

BUSINESS ADDRESS

57 F. PASCO AVE., SANTOLAN, CITY OF PASIG, NCR,  
SECOND DISTRICT, PHILIPPINES

STORAGE FACILITY ADDRESS

2A M. DE LEON ST., SANTOLAN, CITY OF PASIG, NCR,  
SECOND DISTRICT, PHILIPPINES

submitted information to the satisfaction of the Environmental Management Bureau (EMB), Department of Environment and Natural Resources (DENR) with regard to the Section 7 of the CCO Registration Requirements and is therefore authorized to import:

**R-141b is an Ozone Depleting Substance with Ozone Depleting Potential of 0.11 and with quota allotment of 82577.07 kg for year 2019**

TRADE NAME/S

**R-141b**

A SUBSTANCE/S WITH

Single Chemical Composition

GENERIC NAME

Dichlorofluoroethane or HCFC-141b

PERCENT AND GENERIC NAME

100% of Dichlorofluoroethane (HCFC-141b)

subject to the following conditions:

1. Submission of duly accomplished registration requirements and form.
2. All importation of this substance shall require Pre-Shipment Importation Clearance from EMB.
3. All requirements of DAO 2013-25 (Revised Regulations on the CCO) for the importation and use of Ozone Depleting Substances shall be complied with. Any violations thereof will be subject to penalty under the law.
4. HCFC-141B shall be strictly distributed and utilized for cleaning purposes only. The EMB will issue a Notice of Violation if found otherwise.
5. A Certificate of Registration issued by the Department through the Bureau is valid only for the calendar year when it was obtained. An application for the renewal of registration for every succeeding period prior to any importation must be submitted within the last thirty (30) days of the current calendar year.

**Issued this 22 Jan 2019 and shall remain valid until 31 Dec 2019.**

**ENGR. METODIEO PEREZ**  
DIRECTOR, ENVIRONMENTAL MANAGEMENT BUREAU (EMB)



This is a computer generated certificate.  
To verify the authenticity of this file,  
kindly scan the generated QR Code  
using your QR Code scanner/reader or  
visit the OPMS website for details.

12/11/2019

Protect the environment ... Protect life...

29

# Example of Application form for Pre-Shipment Importation Clearance (PSIC) for ODS

Page 1 of 4

Republic of the Philippines  
Department of Environmental and Natural Resources  
**ENVIRONMENTAL MANAGEMENT BUREAU**  
Central Office  
ENB Building, DENR Compound, Vayas Ave., Quezon City

**APPLICATION FOR PRE-SHIPMENT IMPORTATION CLEARANCE OF OZONE-DEPLETING SUBSTANCES AND ALTERNATIVE CHEMICAL SUBSTANCES**

**A. GENERAL INFORMATION**

I. Applicant's Name ALEXANDER CHUA

II. Business Name THERMO ENGINEERING SUPPLY CORPORATION

Business Address 57 F. Pasco Ave., Santolan, CITY OF PASIG, NCR, SECOND DISTRICT, Philippines

Telephone No (02) 845 5441

Fax No (02) 881 7212

III. Contact Person RENATO BERNARDO

Name RENATO BERNARDO

Position Pollution Control Officer

Mobile No 0922-804865

Tel No (02) 845 5441

IV. Type of Importer ✓ Importer - Distributor

Storage Facility Address 2A M. De Leon St., Santolan, City of pasig, Nor. second district, Philippines

Telephone No (02) 845 5441

Fax No (02) 881 7212

Storage Size 1000.0

**B. DATA ON SUBSTANCE SUBJECT TO IMPORTATION**

V. Substance Name R-22

VI. Intended Use Cooling Agent

VII. Blend Generic Name Chlorodifluoromethane or HCFC-22

VIII. Brand / Trade / Commercial Name SOLFRON-HCFC-22

IX. Quantity (in kg) 52016.0

X. Purchase Price in \$ / kg 0.80

Percent	Generic Name	Chemical Formula
100%	Chlorodifluoromethane (HCFC-22)	CHClF <sub>2</sub>

**C. TRANSACTION DATA**

IX. Name of Manufacturing Company Ninhua Group Co. Ltd.

Business Address 21st Jiangsu St. Ningbo P.R. China

Contact Number 86-574-8734 8868

Page 2 of 4

X. Name of Exporting Company ICCOL INTERNATIONAL COMMERCE LIMITED

Business Address 2F Bldg 2, No.185 Tonghui Road, Jiangbei District, Ningbo, China

Contact Number 86-574-8785 4668

XI. Port of Loading Port of China

Expected Date of Arrival March 15, 2019

Expected Port of Arrival Port of Manila

Port Address Manila, Philippines

**D. PRESENT INVENTORY OF SAME SUBSTANCE SUBJECT FOR IMPORTATION (UNDER APPLICANT'S CUSTODY)**

XII. Quantity 55028.22 kg

Size of Storage Area 500.0 m<sup>2</sup>

**E. SUMMARY OF TRANSACTIONS**

Name	Address	Region	Nature of Enterprise	Intended Use	Quantity Distributed	OR No.	Date of Sale
There are no transactions on record yet							

**F. LIST OF INTENDED USERS**

Name	Address	Contact No	Nature of Enterprise	Intended Use	Quantity Distributed	Purchase Order No. covered by transaction
Coldair Phils. Inc.	Coldair Phils. Inc.	8315713	End User	RACS	5000.0 kg	None
South Supermart - Pasig	A Rodriguez Ave., Pasig City	6430796	End User	RACS	5000.0 kg	None
Conduza Express Services	#5 Michael Arcadio M. Hiley St Roque, Mirina	6432080	End User	RACS	5000.0 kg	None
Frontier Maintenance Solution	2nd Flr. Magenta Bldg. #142 Rotonda Brgy. Canibogan, Pasig City	6435298	End User	RACS	2000.0 kg	None
Arnel Panagas	Origas Ave. Extn., Pasig City	6474293	End User	RACS	5000.0 kg	None
Caryl Cooling Enterprises	Lot II Baytown Road Angono, Rizal	6485890	Dealer	RACS	4000.0 kg	None

Page 3 of 4

Name	Address	Contact No	Nature of Enterprise	Intended Use	Quantity Distributed	Purchase Order No. covered by transaction
Mauro Panagas Jr.	Kin. 19 WCS Bldg. Origas Ave. Extn. Cainta, Rizal	6561200	End User	RACS	3000.0 kg	None
Scan Air System Inc.	49 Golf st. St. Francis, Cainta	6568540	End User	RACS	3000.0 kg	None
Macro Kold Corp.	Unit 1003B West Tower Phil. Stock Exchange Rte. Origas, Pasig City	6613839	End User	RACS	4000.0 kg	None
Polaris Integrated Industries	Polaris Bldg. Zamora cor Enriquez St. Lucena City	6722549	Dealer	RACS	2000.0 kg	None
Prima Refrigeration	Macros Hwy, Cainta, Rizal	6812687	Dealer	RACS	4000.0 kg	None
Jelcons Enterprises Inc.	7 St Andrews st. Milagros Subd. Dela, Antipolo	6671261	Dealer	RACS	2000.0 kg	None
MRI Refrigeration	1878 E. Rodriguez St. Blvd., Cubao, Q. C.	7214057	Dealer	RACS	2016.0 kg	None
H.M Marketing	1878 E. Rodriguez St. Blvd., Cubao, Q. C.	7224273	Dealer	RACS	5000.0 kg	None
Kamani Inc.	1743 Andralucia St. Sta. Cruz, Manila	7228154	Dealer	RACS	3000.0 kg	None
Gaisano City	Corrales Ave. Ext. Cagayan de Oro	7258155	End User	RACS	3000.0 kg	None
Lagamayo General Merchandise	San Juan st., Vnac, Cainta/Luana	7317157	Dealer	RACS	2000.0 kg	None
Magic Air Industries	587 Gonzalo-Puyat st. Razon, Manila	7333822	Dealer	RACS	3000.0 kg	None

**G. INVENTORY DETAILS**

PSIC No.	Present Inventory	Total Arrival	Total Distributed	Previous Inventory
None	55028.22 kg	0 kg	0 kg	55028.22 kg

Page 4 of 4

**H. NOTARIZED CERTIFICATION**

THE UNDERSIGNED CERTIFY THAT THE INFORMATION PROVIDED IN THIS FORM IS TRUE AND ACCURATE.

NAME ALEXANDER G. CHUA

DESIGNATION / POSITION Import and Procurement Manager

SIGNATURE [Signature] DATE Jan. 28, 2019

I acknowledge that this application form is a legally binding document, and I declare, under the penalties of perjury, that the same has been accomplished in good faith, verified by me, and, to the best of my knowledge and belief, is true and correct pursuant to the regulations issued under authority thereof.

(Notary Public)

ATTY. CHARLES E. MIRANDILLA  
Notary Public for and in the Cities of Pasig and San Juan and the Municipality of Marikina  
Appointment No. 80 (2015-2016)  
Roll of Attorneys No. 58825  
BPN No. 07056 / 1-25-2016 / PSJM Chapter  
PTN No. 540336 / 1-25-2016 / Pasig City  
MCLE Compliance No. 14022861 / Oct. 2, 2016  
Commission until December 31, 2018  
Ground Floor, AD Center Square Bldg. Santolan, Pasig City

Doc no. 4  
Page no. 3  
Page no. 169  
Signed up 2019



# Example of Pre-Shipment Importation Clearance for ODS



Republic of the Philippines  
Department of Environmental and Natural Resources  
**ENVIRONMENTAL MANAGEMENT BUREAU**  
Central Office  
EMB Building, DENR Compound, Visayas Ave., Quezon City  
Tel No: 920-2253  
mail@emb.gov.ph

Importation Clearance Number  
ODS-IC-OL-19-00091-B

EMB Copy

## PRE-SHIPMENT IMPORTATION CLEARANCE

of  
Ozone-Depleting Substance (ODS)  
to be used only for one (1) shipment at  
Port of Manila

Pursuant to the Montreal Protocol on Substances that Deplete the Ozone Layer and by virtue of the authorities vested by Republic Act 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990), and Section 30 of Republic Act 8749 (The Philippine Clean Air Act of 1999) as implemented by the DENR Administrative Order 25, Series of 2013 or the Revised Regulations on the Chemical Control Order (CCO) for Ozone Depleting Substances (ODS)

### THERMO ENGINEERING SUPPLY CORPORATION

STORAGE FACILITY ADDRESS: 2A M. DE LEON ST., SANTOLAN, CITY OF PASIG, NCR, SECOND DISTRICT,  
PHILIPPINES

is hereby granted Clearance for the importation of

62,016.00 kg of  
**SOLFRON-HCFC-22 (Chlorodifluoromethane or HCFC-22)**  
Tariff Code 2903.71.00  
Components:

100% of Chlorodifluoromethane (HCFC-22)

with

Proforma Invoice Number E19AH0004-REV1

provided that the above mentioned importer complies with and follows the Terms and Conditions of this Clearance as stipulated and that the DENR has the authority to rescind the same upon written notice, and provided 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.

1. The importer must be aware of the Montreal Protocol requirements and must continue to promote non-ODS such as the substance subject to this Clearance and must inform its clients of the same.
2. The importer must use and/or distribute the substance only for its approved predetermined use and only to those clients that were submitted prior to the issuance of this Clearance.
3. Considerable efforts must be made to secure up-to-date information on the possible environmental and health effects of ODS Alternatives.
4. Proper housekeeping of the storage facility must be observed to reduce the risk of accidents and contamination of the substances.
5. The handling, labeling and storage procedures, including safety precautions and emergency procedures as indicated in the Safety Data Sheet (SDS) must be strictly followed and monitored by EMB-NCR.
6. The SDS must be provided to its clients to ensure that the substances are handled and used properly.
7. The importer will be held liable for and compensate the affected parties for any damages to human health and the environment in case of spillage or release of these substances. Insurance coverage must be obtained, a copy of which must be provided to the Environmental Management Bureau (EMB), one week prior to arrival.
8. All pertinent records and documents must be kept on file and made available to authorized personnel of EMB for inspection upon their request.
9. Any violations of this Clearance is subject to penalty provisions set forth by law.
10. It must clearly be understood that a signatory country to the Montreal Protocol on Substances that Deplete the Ozone Layer, the basic intent and commitment is the phasing-out of ODS and the development of alternative chemicals. As such, subsequent applications for importation of the same substance shall be subject to strict evaluation and in-depth study.

Issued this 28 Feb 2019 and shall remain valid until Dec. 31, 2019 or until such time that the substance in the said clearance has been consummated whichever is earlier, unless otherwise nullified or declared invalid for causes and reasons of national interest or by the force of law.

ENGR. METRODOR PERILLA  
DIRECTOR, ENVIRONMENTAL MANAGEMENT BUREAU (EMB)



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Republic of the Philippines  
Department of Environmental and Natural Resources  
**ENVIRONMENTAL MANAGEMENT BUREAU**  
Central Office  
EMB Building, DENR Compound, Visayas Ave., Quezon City  
Tel No: 920-2253  
mail@emb.gov.ph

Importation Clearance Number  
ODS-IC-OL-19-00091-B

BOC Copy

## PRE-SHIPMENT IMPORTATION CLEARANCE

of  
Ozone-Depleting Substance (ODS)  
to be used only for one (1) shipment at  
Port of Manila

Pursuant to the Montreal Protocol on Substances that Deplete the Ozone Layer and by virtue of the authorities vested by Republic Act 6969 (Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990), and Section 30 of Republic Act 8749 (The Philippine Clean Air Act of 1999) as implemented by the DENR Administrative Order 25, Series of 2013 or the Revised Regulations on the Chemical Control Order (CCO) for Ozone Depleting Substances (ODS)

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Importer Copy

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31



# **DAO – Section 8 Pre-Shipment Importation Clearance (PSIC) for ODS**

## **Section 8:**

Registered importers must secure a PSIC from the Department through the Bureau prior to the entry of ODS in any area within the Philippine territory.

Any shipment not covered by the PSIC shall be deemed to have been illegally imported, in which case, the same shall be confiscated and forfeited in favor of the government.

**ODS On –Line Permitting System (OPMS)**

**Website : [opms.emb.gov.ph](http://opms.emb.gov.ph)**



# **DAO – Section 9: Registration and Renewal of Registration of Dealers, Retailers, and Re-sellers of ODS**

Documentary requirements for the Certificate of Registration

A Certificate of Registration issued by the Department through the Regional Offices of the Bureau is valid only for the calendar year when it was obtained. Applicants are thus encouraged to submit their respective applications for renewal and accompanying documents within the last thirty (30) days of the current calendar year

Only dealers, retailers, and re-sellers registered by the Department through the Regional Offices of the Bureau may purchase, re-sell, and distribute ODS

ODS may only be sold or distributed to registered service providers

**ODS On –Line Permitting System (OPMS)**

**Website : [opms.emb.gov.ph](http://opms.emb.gov.ph)**

# DAO – Section 10: Registration and Renewal of Registration of Service Providers of ODS-using Equipment

- TESDA-certified technicians
- DTI accredited service shops

Service providers should have the capability to take effective measures, including the necessary equipment, technology, training and infrastructure, for the purpose of effectively handling ODS, including responsible re-use of refrigerants, minimizing their emissions, and ultimately, phasing out their use by replacing with substitutes or alternatives duly recognized and certified by the Department and the Bureau



# **DAO – Section 9: Registration and Renewal of Registration of Dealers, Retailers, and Re-sellers of ODS**

## **Service providers shall**

- adhere to the good practices in handling and working with refrigerants...Code of Practice for Refrigeration and Air conditioning
- participate in a system to recover, reclaim and re-use refrigerants

## **Certificate of Registration with a 3-year validity**

**Applications for renewal may thus be submitted within the last thirty (30) days of the third calendar year.**

**Note: EMB Memorandum Circular for the implementation of this Section has been drafted. Public Consultation Meeting has been conducted on 7 August 2019 at Sulo Riviera Hotel prior to its approval by the EMB Director.**

# DAO – Sections 11, 12, and 13

## **Section 11: Regulation of the Export of ODS (new)**

- Export of controlled substances, in any form, whether alone or in mixtures, including those that are used, stored, reclaimed, recycled, or recovered as well as unwanted ODS.
- Export of wastes containing ODS shall be governed by the appropriate DENR rules and regulations on hazardous waste management and the Basel Convention.

## **Section 12: Registration and Renewal of Registration of Exporters of ODS (new)**

A Certificate of Registration issued by the Department through the Bureau is valid only for the calendar year when it was obtained. Applicants are thus encouraged to submit their applications for renewal and accompanying documents within the last thirty (30) days of the current calendar year

## **Section 13: Pre-Shipment Export Clearance (PSEC) (new)**





## DAO – Section 14: Records Keeping

- Importers, Exporters, Dealers, Retailers, and Re-sellers must keep a record of all transactions and submit annual reports to the Bureau by the 31<sup>st</sup> of January of the following year
- Service providers must keep a record of all transactions, including quantity of recovered refrigerants – subject to validation by the EMB (new)
- Records retained must be available for inspection by an authorized officer of the DENR through the EMB



## **DAO – Section 16: Capability-Building Program (new)**

to increase research and  
information, education and communication efforts (IEC)



## DAO – Section 17: Administrative violations

- 17.1 Back conversion;
- 17.2 Installation of CFC-using system;
- 17.3 Sale and use of small disposable containers (< 1 kg) with CFCs;
- 17.4 Importation or manufacturing or placing in the market of products or equipment containing halons or CFCs;
- 17.5 Use of CFC-containing equipment in mobile transportation starting in 2012;
- 17.6 Use of CFC-11 as blowing agent for foam manufacturing;
- 17.7 **Intentional release or venting of ODS;**
- 17.8 Use of CFC-11 and other banned ODS as flushing or cleaning agent; and
- 17.9 **Possession of un-registered refrigerants, including mislabeling of controlled substances.**



# Inspection and Investigation of unregistered ODS and ODS alternatives





# DAO – Section 18: Penal Provisions

## **Administrative and criminal liability**

- Sections 13, 14, and 15 of RA 6969
- Sections 43 and 44 of DAO 92-29

## **Consequences of violations: (new)**

- cancel the registration of importers, exporters, dealers, retailers and resellers
- recommend the cancellation of the DTI accreditation
- recommend the cancellation of the TESDA certificates of competency

Take Note: You may **call at 888** if you found technician/s that are conducted intentional venting for malpractice. TESDA may cancel his TESDA certificates of competency

# HCFC Phase-out Management Plan (HPMP)



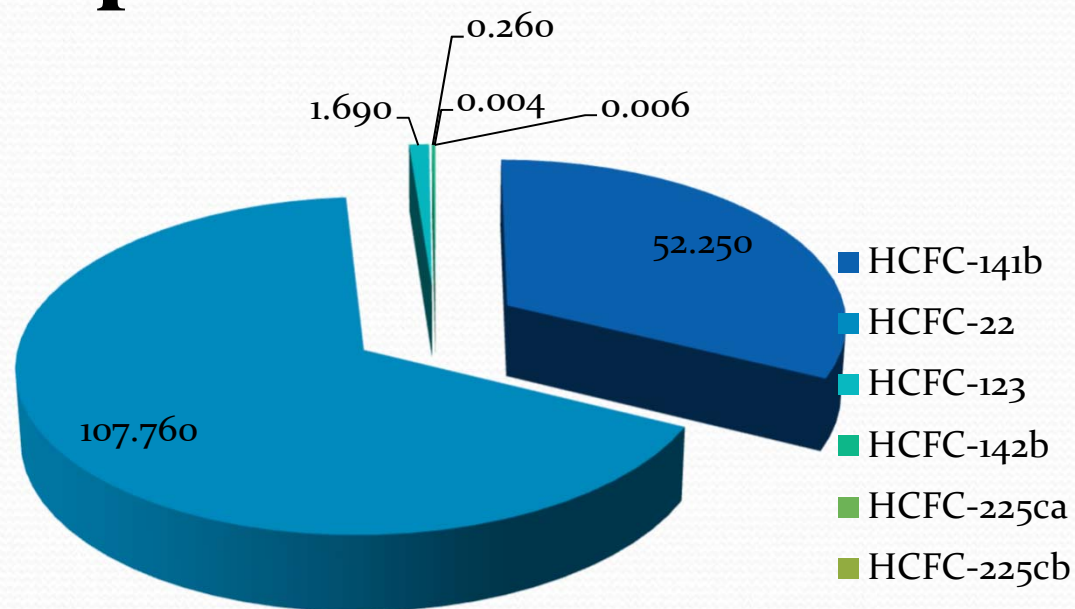


# HCFC Phase-out Management Plan (HPMP)

- Mix of investment and non-investment projects aimed to phase-out HCFCs in the different sectors:
  - Investment Projects – provide technical assistance, projects to assist industries in shifting to non-HCFC technologies
  - Non-investment projects – provide training, capacity building, public awareness activities, policy and regulatory support

# Philippines' HCFC Baseline Consumption

SUBSTANCE	ODP TONNES	%
TOTAL HCFC-22	107.76	67%
TOTAL HCFC 141B	52.25	32%
TOTAL HCFC -123	1.69	1%
TOTAL HCFCs	161.97	100%



-HCFCs are the predominant chemicals used in the foam blowing, refrigeration, and air conditioning end-use sectors in the Philippines. A significant amount of HCFCs are also used in the servicing end-use sectors. Since no HCFCs are produced within the Philippines and there are no reported exports, HCFC consumption is assumed to equal the total imported quantity of HCFCs.

-The primary basis of the HPMP is the consumption or importation and usage of HCFCs. A baseline consumption which is the average of 2009 to 2010 HCFC consumption was determined for the development of the HPMP.



# HPMP Stage 1 (2013-2016)

- Overarching strategy for HCFC phase-out
- Phase-out of HCFC-141b in the foam sector
  - ❖ ODP = 0.11; GWP = 700
- Alternative Foam Blowing agents:

## Alternative technologies for rigid foam

Polyurethane foam product	ODS technology/ Blowing agent	Non-ODS technology
Continuous and discontinuous insulation panels	HCFC-141b	Hydrocarbon: Pentane
Thermoware and commercial refrigerators/ freezers		Water blown Technology
Flexible molded products		Liquid carbon dioxide
Spray foam		Under evaluation: Supercritical carbon dioxide; liquid blowing agent; methyl formate; etc.

# Foam Sector Plan





# Foam Manufacturing Equipment



CYCLOPENTANE TECHNOLOGY



WATER BLOWN TECHNOLOGY



INJECTION INTO HP FOAMING MACHINE

# GRACO REACTOR SPRAY FOAM APPLICATION





## HPMP Stage 2 (2017-2020)

- Phase-out of HCFC-22 in the refrigeration and air conditioning equipment sector
  - ❖ ODP = 0.055
  - ❖ GWP = 1,700
- Alternative cooling agents in the domestic air-conditioning sector being considered:
  - ❖ Hydrocarbon (R-290)  
(Zero ODP; very low GWP but flammable)
  - ❖ HFC-32 (R-32)  
(Zero ODP; GWP = 675; slightly flammable)

**Note:** We are expected to implement the HPMP Stage 2 by last quarter of this year. Our recipient for the project are Koppel, Inc., Concepcion Carrier, Johnson Controls-Hitachi and Panasonic.

## HPMP Stage 3 (beyond 2020)\*

- Phase-out of the remaining HCFCs (HCFC-22 in the commercial and industrial refrigeration and air conditioning sectors)
- Phase-out of HCFC-123 in the manufacturing and servicing sectors
  - ODP = 0.02
  - GWP = 70
- Phase out of all HCFCs in the servicing sector





# **EMB MEMORANDUM CIRCULAR 2005-03**

**Title: List of Alternatives for Ozone Depleting Substances (ODS)**

**Basis:**

- Section 3 of Republic Act 6969 known as Toxic Substances, Hazardous Wastes and Nuclear Wastes Control Act of 1990 referring to unregulated substances and mixtures in the Philippines
- In connection with DAO 2004-08 “Revised Chemical Control Order for ODS”



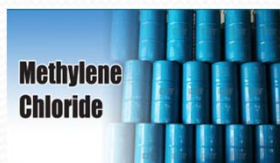
# EMB MEMORANDUM CIRCULAR 2005-03

## Coverage:

- TETRAFLUOROETHANE (HFC-134A)
  - DICHLOROMETHANE (Methylene Chloride)
  - HEPTAFLUOROPROPANE (HFC-227EA)
  - HEXAFLUOROPROPANE (HFC-236FA)
  - TRIFLUOROMETHANE (HFC-23)
  - TETRAFLUOROMETHANE (CF<sub>4</sub>) or (R<sub>14</sub>)
  - HYDROFLUOROCARBONS (HFCs) BLENDS
- 
- **Other HFCs and HFCs blends shall be directed with EMB through the EQD for proper evaluation and assessments.**



# Hydrofluorocarbons (HFCs)



Substance	100 y GWP	Chemical name
HFC-32*	675	Difluoromethane
HFC-41	92	Methyl fluoride
HFC-125	3,500	Pentafluoroethane
HFC-134	1,100	1,1,2,2-Tetrafluoroethane
HFC-134a*	1,430	1,1,1,2-Tetrafluoroethane
HFC-143	353	1,1,2-Trifluoroethane
HFC-143a	4,470	1,1,1-Trifluoroethane
HFC-152	53	1,2-Difluoroethane
HFC-152a*	124	1,1-Difluoroethane
HFC-161	12	Monofluoroethane
HFC-227ea**	3,220	1,1,1,2,3,3,3-Heptafluoropropane
HFC-236cb	1,340	1,1,1,2,2,3-Hexafluoropropane
HFC-236ea	1,370	1,1,1,2,3,3-Hexafluoropropane
HFC-236fa**	9,810	1,1,1,3,3,3-Hexafluoropropane
HFC-245ca**	693	1,1,2,2,3-Pentafluoropropane
HFC-245fa	1,030	1,1,1,3,3-Pentafluoropropane
HFC-365mfc	794	1,1,1,3,3-Pentafluorobutane
HFC-43-10mee***	1,640	1,1,1,2,2,3,4,5,5,5-Decafluoropentane
HFC-23*	14,800	Trifluoromethane



# **EMB MEMORANDUM CIRCULAR 2005-03**

## **REQUIREMENTS FOR THOSE ENGAGED IN THE LIST OF ALTERNATIVES TO ODS**

### **- FOR IMPORTERS**

Shall register annually to EMB and secure Pre-Shipment Importation Clearance (PSIC) prior to the entry in the area of the Philippines Territory at prescribed fee imposed by EMB (**Please refer to On-Line Permitting System (OPMS) for ODS re application and requirements for Certificate of Registration and Pre-Shipment Importation Clearance to import alternative to ODS**)

### **- FOR USERS, DEALERS AND MANUFACTURERS**

Shall submit quarterly report as to their institutes distribution and utilization processes to the EMB





# **EMB MEMORANDUM CIRCULAR 2005-03**

## **Penal Provisions:**

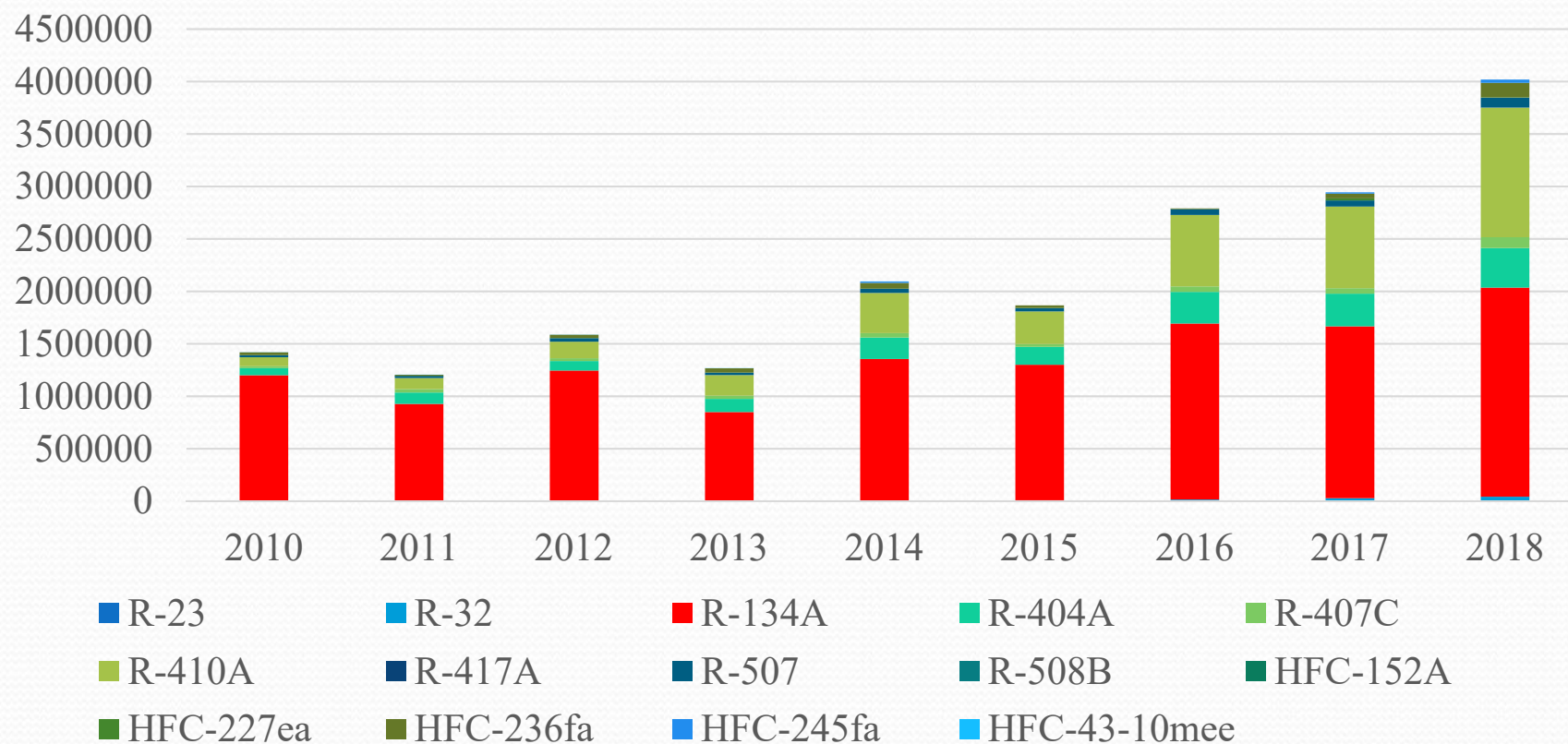
### **Administrative and criminal liability**

- Sections 14 and 15 of RA 6969
- Sections 43 and 44 of DAO 92-29

### **Effectivity:**

- **Signed on 19 APRIL 2005 by EMB DIRECTOR**

# HFC CONSUMPTION (KG.)





# **Clarification to the Requirements of Registration on Importation of Alternatives to ODS and amending MC 2005-03**

- **In the advent to the Kigali Amendment to the Montreal Protocol that came into effect on 1 January 2019 amending MC 2005-03**
- **Added new ODS alternatives like HFOs, HFO blends, HC and HC blends**
- **Remove methylene chloride from the list. It will now be under PCL.**
- **Definition of Terms**
- **Phase-down schedule of HFCs**
- **Quota Allocation for the importation**
- **Policy for Importers, Distributors/Dealers, Service Providers**
- **Administrative Violations**
- **Records Keeping**
- **IEC**
- **Penal Clause**

## Informal Prior Inform Consent (iPIC)

- The online iPIC (Informal Prior Informed Consent) is a method of the exchanging information about national licensing system on ODS.
- The online system provides iPIC participating countries with real-time, 24-hour, 7-days a week personalized access to key licensing system data in each of the participating countries. The system provides a standardized and secured repository of iPIC data.
- As of December 2012, the online iPIC system contains data from 63 countries including details on more than 1000 companies licensed to trade ODS, information on equipment or products with trade restrictions.
- For Philippine situations, it is part of the requirements for the application of Pre-Shipment Importation Clearance to import ODS, the export license of exporting country and verify or validate through the iPIC updated data the registered importers or exporters of ODS for each country.
- Countries like Singapore and China clarified the POD about the importers coming from the Philippines that would like to purchase ODS from their country if they are registered importer or attached PSIC if this is valid and issued by EMB.







# Challenges

- Selection of alternative technologies  
(zero ODP, low GWP, energy use/energy efficiency, health and safety considerations –toxicity, flammability, etc., economic aspects –availability in the market, cost)
- Illegal trade in ODS
- Use of HCFC-141b as a flushing agent
- Disposal of unwanted ODS





***Thank you for your attention!***



**For more information:**

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**Email: [pod@emb.gov.ph](mailto:pod@emb.gov.ph)**