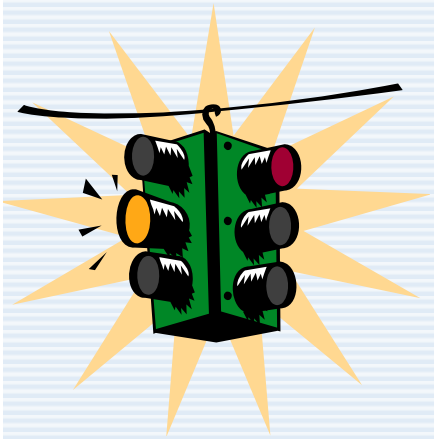


Identification Of ODS; including ODS-containing mixtures, and Equipment & Goods containing ODS

ROMY LLOYD D SO

Formal Entry Division

MANILA INTERNATIONAL CONTAINER PORT

Bureau of Customs

- **Revenue Generating Agency**
- **Implementing Body of OGA**

Types of Importation

- Section 116 Free Importation & Exportation
- Section 117 Regulated Importation & Exportation
- Section 118 Prohibited Importation & Exportation
- Section 119 Restricted Importation & Exportation

1x20 Contr. STC 1,150 cylinders of Koman Refrigerant chemicals worth P4 million

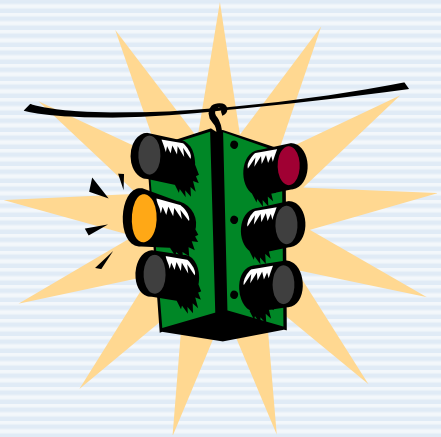
- Barcolair Philippines Inc.
- September 7, 2019, from China.

(Bureau of Customs PH official Facebook page/ MANILA BULLETIN)

Penalty

Section 117 in relation to Section 1113 of the Republic Act No. 10863 or the Customs Modernization and Tariff Act (CMTA) and Customs Memorandum Order No. 9-2015 in relation to RA 6969 and EMB Memorandum Circular Order No. 2005-03.

SECTION 119 IN RELATION TO SECTION 1147 Disposition of Restricted Goods



Identification Of ODS; including ODS-containing mixtures, and Equipment & Goods containing ODS

IDENTIFICATION BASED ON PAPERS

- Single Administrative Document (formerly IEIRD)
- Pro-forma or Commercial Invoice & PL
- Product Literature
- Safety Data Sheet (SDS)
- Bill of Lading or Airway Bill
- Goods Declaration *(of previous importation)*
- Advance Manifest
- Stowage Plan
- Country of Origin / Producing Country

IDENTIFYING ODS, INCLUDING ODS-CONTAINING MIXTURES

IDENTIFICATION BASED ON DATA:

- CHEMICAL FORMULA
- CHEMICAL NAME AND ABBREVIATION
- CUSTOMS HS CODING (AHTN)
- SPECIFIC NUMBER (ASHRAE, CAS, UN)
- TRADE NAME

IDENTIFICATION BASED ON PHYSICAL / CHEMICAL PARAMETERS

- COLOUR CODE
- GAS OR LIQUID AT ROOM TEMPERATURE
- CHEMICAL ANALYSIS
- TEMPERATURE / PRESSURE CHARTS
- USING ODS IDENTIFIER

BY CHEMICAL FORMULA

KEY CHEMICAL ELEMENTS

- → CHLORINE (Cl)
- → FLUORINE (F)
- → BROMINE (Br)

OTHER CHEMICAL ELEMENTS

- → CARBON (C)
- → HYDROGEN (H)

BY CHEMICAL NAME AND ABBREVIATION

- CFCs, HCFCs

  ……. *CHLORO* ……. *FLUORO*……

  EXAMPLES :

  - DICHLORODIFLUOROMETHANE (CFC-12)
  - 1,1-DICHLORO-1-FLUOROETHANE (HCFC-141b)

IDENTIFICATION OF ODS (3)
AHTN CODE

AHTN IN CONTEXT OF PURE ODS

29.03 - Halogenated Derivatives of Hydrocarbons
- Saturated chlorinated derivatives of acyclic hydrocarbons

- 2903.11 - - Chloromethane (methyl chloride) and Chloroethane (ethyl chloride):
- 2903.11.90 - - - Methyl Chloride
- 2903.11.90 - - - Other
- 2903.12.00 - - Dichloromethane (methylene chloride)
- 2903.13.00 - - Chloroform (trichloromethane)
- 2903.14.00 - - Carbon tetrachloride
- 2903.15.00
- 2903.15.00 - - Ethylene dichloride (ISO) (1,2-dichloroethane)
- 2903.19 - - Other
- 2903.19.10 - - - 1,2 - Dichloropropane (propylene dichloride) and dichlorobutanes
- 2903.19.20 - - - 1,1,1 - Trichloroethane (methyl chloroform)
- 2903.19.90 - - - Other

2903 - Halogenated Derivatives of Acyclic Hydrocarbons Containing Two or More Different Halogens

- 2903 - Halogenated derivatives of acyclic hydrocarbons containing two or more different halogens
- 2903.74.00 - - Chlorodifluoroethane
- 2903.72.00 - - Dichlorotrifluoroethanes
- 2903.73.00 - - Dichlorofluoroethanes
- 2903.74.00 - - Chlorodifluoroethanes
- 2903.75.00 - - Dichloropentafluoropropanes
- 2903.76.00 - - Bromochlorodifluoromethane, bromotrifluoromethane and dibromotetrafluoroethanes
- 2903.77.00 - - Other, perhalogenated only with fluorine and chlorine
- 2903.78.00 - - Other, perhalogenated derivatives
- 2903.79.00 - - Other

HS Classification for ODS (2012)

Under the HS 2012 HCFCs and certain other ODS are to be classified in the HS as follows:

Chapter 29. Organic chemicals

29.03 Halogenated derivatives of hydrocarbons.

[…]
2903. - Halogenated derivatives of acyclic hydrocarbons containing two or more different halogens :

2903.71 - - Chlorodifluoromethane *(= HCFC-22)*
2903.72 - - Dichlorotrifluoroethanes *(= HCFC-123, covers two isomers)*
2903.73 - - Dichlorofluoroethanes *(= HCFC-141, covers 3 isomers including the most popular HCFC-141b)*
2903.74 - - Chlorodifluoroethanes *(= HCFC-142, covers 3 isomers, including the most popular HCFC-142b)*
2903.75 - - Dichloropentafluoropropanes *(= HCFC-225, covers 9 isomers, including the most popular HCFC-225ca and HCFC-225cb)*
2903.76 - - Bromochlorodifluoromethane, bromotrifluoromethane and dibromotetrafluoroethanes
[…]
2903.79 - - Other *(= all remaining HCFCs and a number of other halogenated derivatives of acyclic hydrocarbons containing two or more different halogens, including inter alia the following ozone depleting substances controlled by the Montreal[Protocol: hydrobromofluorocarbons (HBFCs) and bromochloromethane (BCM))*

Overleaf is presented a correlation table showing the previous HS classification of ODS until 31 December 2011 (HS 2007) and the revised classifications which were applicable from 1 January 2012 (HS 2012). Information is also provided on the current HS codes for ODS-containing mixtures (see back page).

Correlation table showing the HS classification of ODS: HS 2007 and HS 2012

Refrigerant Designation	Chemical Name	Formula	HS 2007	HS 2012	Remarks
Annex A, Group I (CFCs)					
CFC-11	Trichlorofluoromethane	$CFCl_3$	2903.41	2903.77	*Subheadings for Annex A Group I – CFCs (2903.41 - 2903.44) have been merged, together with subheading 2903.45 for Annex B Group I - Other CFCs, into new subheading 2903.77*
CFC-12	Dichlorodifluoromethane	CF_2Cl_2	2903.42		
CFC-113	Trichlorotrifluoroethanes	$C_2F_3Cl_3$	2903.43		
CFC-114	Dichlorotetrafluoroethanes	$C_2F_4Cl_2$	2903.44		
CFC-115	Chloropentafluoroethane	C_2F_5Cl	2903.44		
Annex A, Group II (Halons)					
Halon-1211	Bromochlorodifluromethane	CF_2BrCl	2903.46	2903.76	*Subheading for Annex A Group II – Halons (2903.46) has been renumbered as 2903.76*
Halon-1301	Bromotrifluromethane	CF_3Br			
Halon-2402	Dibromotetrafluroethanes	C_2F4Br_2			
Annex B, Group I (Other CFCs)					
CFC-13, CFC-111, CFC-112, CFC-211, CFC-212, CFC-213, CFC-214, CFC-215, CFC-216, CFC-217			2903.45	2903.77	*Subheading for Annex B Group I – Other CFCs (2903.45) have been merged, together with subheadings 2903.41 to 2903.44 for Annex A Group I - CFCs, into new subheading 2903.77*
Annex B, Group II					
Carbon tetrachloride		CCl_4	2903.14	2903.14	*No change*
Annex B, Group III					
1,1,1-trichloroethane (methyl chloroform)		$C_2H_3Cl_3$	2903.19	2903.19	*No change*

ASHRAE Designation	Chemical Name	Formula	HS 2007	HS 2012	Remarks
Annex C, Group I (HCFCs)					
HCFC-22	Chlorodifluoromethane	CHF_2Cl	2903.49	2903.71	*Individual subheadings: 2903.71 – 2903.75 have been created for common HCFCs formerly classified in subheading 2903.49*
HCFC-123	Dichlorotrifluoroethanes	$C_2HF_3Cl_2$		2903.72	
HCFC-141, 141b	Dichlorofluoroethanes	$C_2H_3FCl_2$, CH_3CFCl_2		2903.73	
HCFC-142, 142b	Chlorodifluoroethanes	$C_2H_3F_2Cl$, CH_3CF_2Cl		2903.74	
HCFC-225, 225ca, 225cb	Dichloropentafluoropropanes	$C_3HF_5Cl_2$, $CF_3CF_2CHCl_2$, CF_2ClCF_2CHClF		2903.75	
Other HCFCs HCFC-21, HCFC-31, HCFC-121, HCFC-122, HCFC-124, HCFC-131, HCFC-132, HCFC-133, HCFC-151, HCFC-221, HCFC-222, HCFC-223, HCFC-224, HCFC-226, HCFC-231, HCFC-232, HCFC-233, HCFC-234, HCFC-235, HCFC-241, HCFC-242, HCFC-243, HCFC-244, HCFC-251, HCFC-252, HCFC-253, HCFC-261, HCFC-262, HCFC-271			2903.49	2903.79	*Other HCFCs, formerly classified in subheading 2903.49, have been merged, together with Annex C Group II - HBFCs and Annex C Group III - BCM, into new subheading 2903.79*
Annex C, Group II (HBFCs)					
All Hydrobromofluorocarbons			2903.49	2903.79	*Subheading for Annex C Group II: HBFCs has been merged into new subheading 2903.79*
Annex C, Group III					
Bromochloromethane (BCM)		CH_2BrCl	2903.49	2903.79	*Subheading for Annex C Group III: BCM has been merged into new subheading 2903.79*
Annex E, Group I					
Methyl bromide (MeBr)		CH_3Br	2903.39*	2903.39	*No change*

*The HS code for methyl bromide (bromomethane) was changed in January 2007; since then the HS code for methyl bromide (bromomethane) is 2903.39. However, many other substances are classified under the same HS code (i.e. 2903.39), including hydrofluorocarbons (HFCs), which are commonly used as substitutes for CFCs and HCFCs. It is therefore recommended that countries insert additional subdivisions in their nomenclatures and assign specific codes for these substances by adding one or more digits to the standard 6-digit HS code 2903.39.

POSSIBLE CODINGS WHERE MIXTURES OF ODS MAY BE HIDDEN

- 3808; 3810; 3811; 38:13; 38:14; 38:15; 38:18; 38:20; 38:22; 38:23; 38:24 high likelihood
- 3824.71 = Mixtures containing CFCs – provided not covered already elsewhere based on usage

HS codes for ODS-containing mixtures

Chapter 38. Miscellaneous chemical products

38.24 Prepared binders for foundry moulds or cores; chemical products and preparations of the chemical and allied industries (including those consisting of mixtures of natural products), not elsewhere specified or included.

[...]

3824. - Mixtures containing halogenated derivatives of methane, ethane or propane :

3824.71 -- Containing chlorofluorocarbons (CFCs), whether or not containing hydrochlorofluorocarbons (HCFCs), perfluorocarbons (PFCs) or hydrofluorocarbons (HFCs)

3824.72 -- Containing bromochlorodifluoromethane, bromotrifluoromethane or dibromotetrafluoroethane *(= containing halons 1301, 1211 or 2402)*

3824.73 -- Containing hydrobromofluorocarbons (HBFCs)

3824.74 -- Containing hydrochlorofluorocarbons (HCFCs), whether or not containing perfluorocarbons (PFCs) or hydrofluorocarons (HFCs), but not containing chlorofluorocarbons (CFCs)

3824.75 -- Containing carbon tetrachloride

3824.76 -- Containing 1,1,1-trichloroethane (methyl chloroform)

3824.77 -- Containing bromomethane (methyl bromide) or bromochloromethane

3824.78 -- Containing perfluorocarbons (PFCs) or hydrofluorocarons (HFCs), but not containing chlorofluorocarbons (CFCs) or hydrochlorofluorocarbons (HCFCs) *(these are mixtures which do not contain ozone depleting substances)*

3824.79 -- Other *(these are mixtures which do not contain ozone depleting substances)*

OTHER AHTN CODE

CHAPTER 32 & 34

Section 11, 12 & 13

FORMAL ENTRY DIVISION

IDENTIFICATION OF HCFCs & HFCs

- BY SPECIFIC NUMBER :
  - ASHRAE NUMBER:
  - AMERICAN SOCIETY FOR HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS

    LETTER "R" (FOR "REFRIGERANT") + SPECIFIC NUMBER

- FOR HCFCs AND HFCs

  → ASHRAE NUMBER = NUMBER USED WITH COMMON ABBREVIATION OR TRADE NAME

  ➢ e.g. R-22, R-134a (ASHRAE NUMBER)

  HCFC-22, HFC-134a (ABBREVIATION)

  FREON–22, KLEA-134a (ONE OF POSSIBLE TRADE NAMES)

ASHRAE designations for single Components

- R-134a
  - *1- One less than the number of carbon atoms (I.e. there are 1+1 = 2 carbon atoms)*
  - *3- One more than the number of hydrogen atoms (i.e., there are 3-1 = 2 hydrogen atoms)*
  - *4- Number of flourine atoms (i.e., there are 4 flourine atoms)*
  - *a- The "a" indicates an isomer (i.e., a different arrangement of the same atoms) of R-134*

IDENTIFICATION OF HCFCs and HFCs

- CAS NUMBER
  - CAS NUMBER = CHEMICAL ABSTRACT SERVICE NUMBER SPECIFIC FOR THE CHEMICAL FORMULA OF THE SUBSTANCE

  e.g. CAS 75-45-6 = CAS NUMBER OF HCFC – 22

  CAS 811-97-2 = CAS NUMBER OF HFC-134a
- UN NUMBER
  - UN NUMBER = SPECIFIC NUMBER DESIGNATED BY THE UNITED NATIONS TO CERTAIN CHEMICALS
  - e.g. UN 1018 = UN NUMBER OF HCFC – 22
  - UN 3159 = UN NUMBER OF HFC – 123a

ASHRAE, CAS OR/AND UN NUMBERS ARE USUALLY SHOWN ON ODS CONTAINERS

IDENTIFICATION OF ODS (6)

- BY TRADE NAME :

  THE MOST COMMON TRADE NAMES FOR CFCs, HCFCs AND MIXTURES CONTAINING THEM USED AS REFRIGERANTS / FOAMING AGENTS / SOLVENT

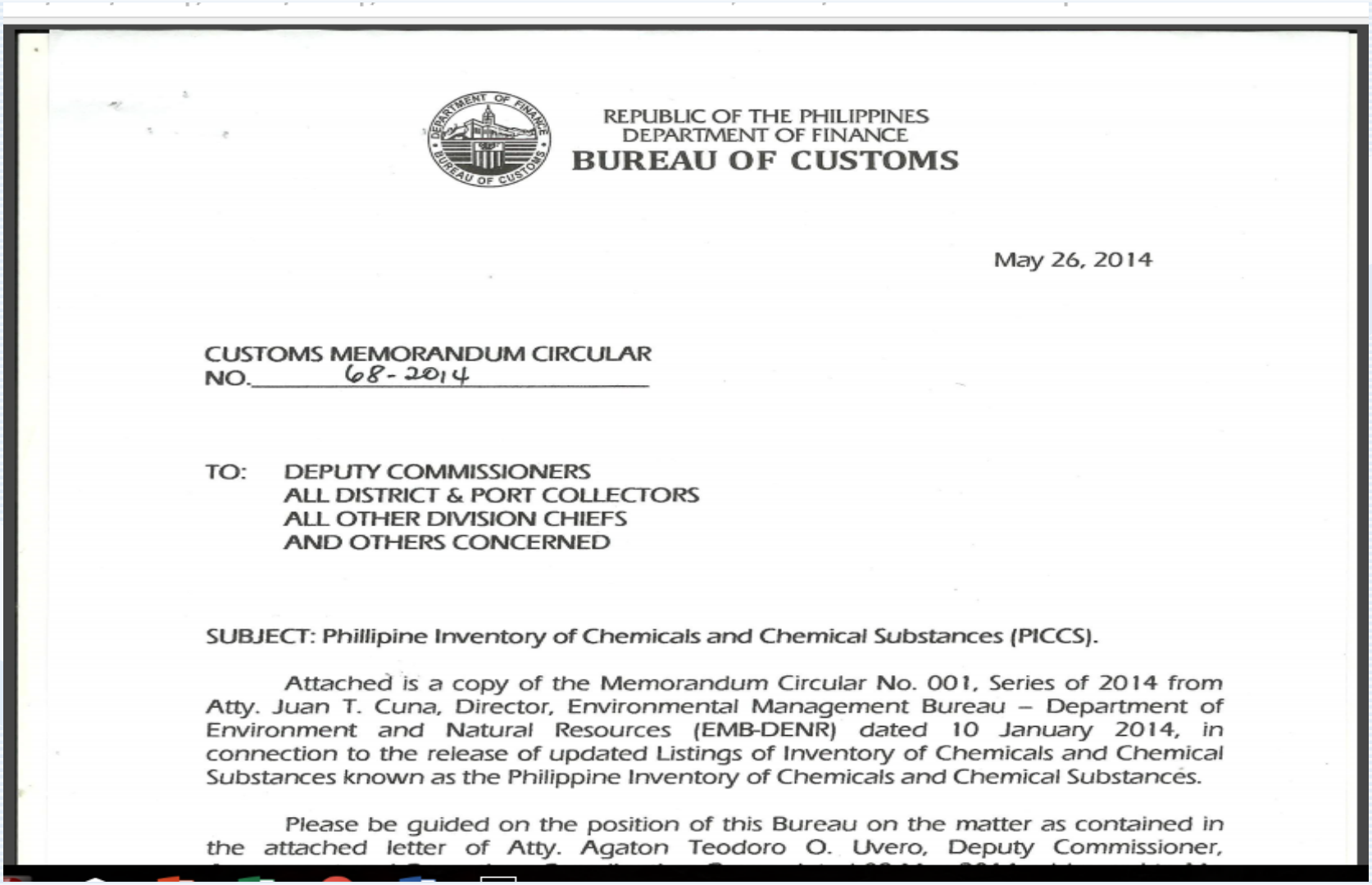
  - ARCTON ➔ ICI (CFCs, HCFCs)
  - ASAHIFRON ➔ ASAHI GLASS (CFCs)
  - ASAHIKLON ➔ ASAHI GLASS (HCFCs)
  - FORANE ➔ ELF ATOCHEM –presently ATOFINA (CFCs, HCFCs)
  - FREON ➔ DU PONT (CFCs, HCFCs)
  - GENETRON ➔ ALLIED SIGNAL (CFCs, HCFCs)
  - ISCEON ➔ RHODIA (CFCs, HCFCs)
  - SOLKANE ➔ SOLVAY (CFCs, HCFCs)
  - SUVA ➔ DU PONT (HCFCs)
  - FLORON ➔SRF Ltd. – India (CFCs)
  - KHLODON ➔ RUSSIAN FEDERATION PRODUCERS (CFCs)

CODING FOR MIXTURES

DIFFICULTIES:

- *WHAT INGREDIENTS - NOT ALWAYS KNOWN*
- *EVEN WHEN KNOWN, PERCENTAGE MAY NOT BE KNOWN*
- *EVEN WHEN PERCENTAGE KNOWN, THEN ALSO TWO WAYS OF CODING*

CUSTOMS LAW GOVERNING ON CHEMICAL GOODS



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF FINANCE
BUREAU OF CUSTOMS

May 26, 2014

CUSTOMS MEMORANDUM CIRCULAR
NO. 68-2014

TO: DEPUTY COMMISSIONERS
ALL DISTRICT & PORT COLLECTORS
ALL OTHER DIVISION CHIEFS
AND OTHERS CONCERNED

SUBJECT: Phillipine Inventory of Chemicals and Chemical Substances (PICCS).

Attached is a copy of the Memorandum Circular No. 001, Series of 2014 from Atty. Juan T. Cuna, Director, Environmental Management Bureau – Department of Environment and Natural Resources (EMB-DENR) dated 10 January 2014, in connection to the release of updated Listings of Inventory of Chemicals and Chemical Substances known as the Philippine Inventory of Chemicals and Chemical Substances.

Please be guided on the position of this Bureau on the matter as contained in the attached letter of Atty. Agaton Teodoro O. Uvero, Deputy Commissioner,

Philippine Inventory of Chemicals and Chemical Substances (PICCS)

- List of all existing chemicals and chemical substances used, imported, distributed, processed, manufactured, stored, exported, treated or transported in the Philippines.

List of Chemicals that DENR-EMB has determined to a **potentially pose unreasonable risk to public health, workplace, and the environment.**

PRIORITY CHEMICAL LIST (PCL)

Chemicals that are restricted or banned due to their serious risks to human health or the environment.

CHEMICAL CONTROL ORDER (CCO)

LIST OF SINGLE SUBSTANCES AND COMPOUNDS COVERED UNDER CHEMICAL CONTROL ORDER (CCO) AND PRIORITY CHEMICAL LIST (PCL)

No.	CAS No.	PICCS Name
1.	106-93-4	1,2-Dibromoethane
2.	95-50-1	0-Dichlorobenzene
3.	106-46-7	1,4-Dichlorobenzene
4.	107-06-2	1,2-Dichloroethane
5.	122-66-7	1,2 Diphenylhydrazine
6.	108-46-3	3-Hydroxyphenol
7.	7647-18-9	Antimony pentachloride
8.	7778-39-4	Arsenic Acid
9.	22441-45-8	Arsenic pentachloride
10.	1303-28-2	Arsenic pentoxide
11.	7784-34-1	Arsenic trichloride
12.	1327-53-3	Arsenic trioxide
13.	1332-21-4	Asbestos
14.	71-43-2	Benzene
15.	13327-32-7	Beryllium hydroxide
16.	7787-49-7	Beryllium fluoride
17.	1304-56-9	Beryllium oxide
18.	13510-49-1	Beryllium sulfate
19.	543-90-8	Cadmium acetate
20.	10108-64-2	Cadmium chloride

21.	10325-94-7	Cadmium nitrate
22.	10124-36-4	Cadmium sulfate
23.	1306-23-6	Cadmium sulfide
24.	67-66-3	Chloroform
25.	76-06-2	Chloropicrin
26.	100025-73-7	Chromium chloride
27.	7789-02-8	Chromium nitrate
28.	1333-82-0	Chromium trioxide
29.	7789-00-6	Potassium Chromate
30	7775-11-3	Sodium Chromate
31.	74-90-8	Hydrogen Cyanide
32.	143-33-9	Potassium Cyanide
33.	151-50-8	Sodium Cyanide
34.	64-67-5	Diethyl sulfate
35.	106-93-4	Ethylene dibromide
36.	75-21-8	Ethylene Oxide
37.	50-00-0	Formaldehyde
38.	111-30-8	Glutaraldehyde
39.	9002-83-9	Halons
40.	67-72-1	Hexachloroethane

41.	302-01-2	Hydrazine
42.	598-63-0	Lead carbonate
43.	1309-60-0	Lead dioxide
44.	15245-44-0	Lead styphnate
45.	1314-91-6	Lead telluride
46.	1314-41-6	Lead tetroxide
47.	1317-36-8	Lead (II) oxide
48.	10099-74-8	Lead (II) nitrate
49.	149-30-4	MBT (2-Mercaptobenzothiazole)
50.	594-42-3	Mercaptan, Perchloromethyl
51.	7774-29-0	Mercury(II) iodide
52.	592-85-8	Mercury thiocyanate
53.	7439-97-6	Mercury metal
54.	7783-34-8	Mercuric nitrate monohydrate
55.	74-87-3	Methyl Chloride
56.	75-09-2	Methylenechloride
57.	87-86-5	Pentachlorophenol
58.	127-18-4	Perchloroethylene
59.	108-95-2	Phenic Acid
60.	75-44-5	Phosgene
61.	85-44-9	Phthalic Anhydride
62.	7782-49-2	Selenium
63.	79-01-6	Trichloroethylene
64.	75-01-4	Vinyl Chloride

DAO
2004-01

POLYCHLORINATED BIPHENYL (PCB)

DMC
2009-02

ENDOSULFAN

SAFETY DATA SHEET

- a document that contains information on the potential health effects of exposure to chemicals, or other potentially dangerous substances, and on safe working procedures when handling chemical products

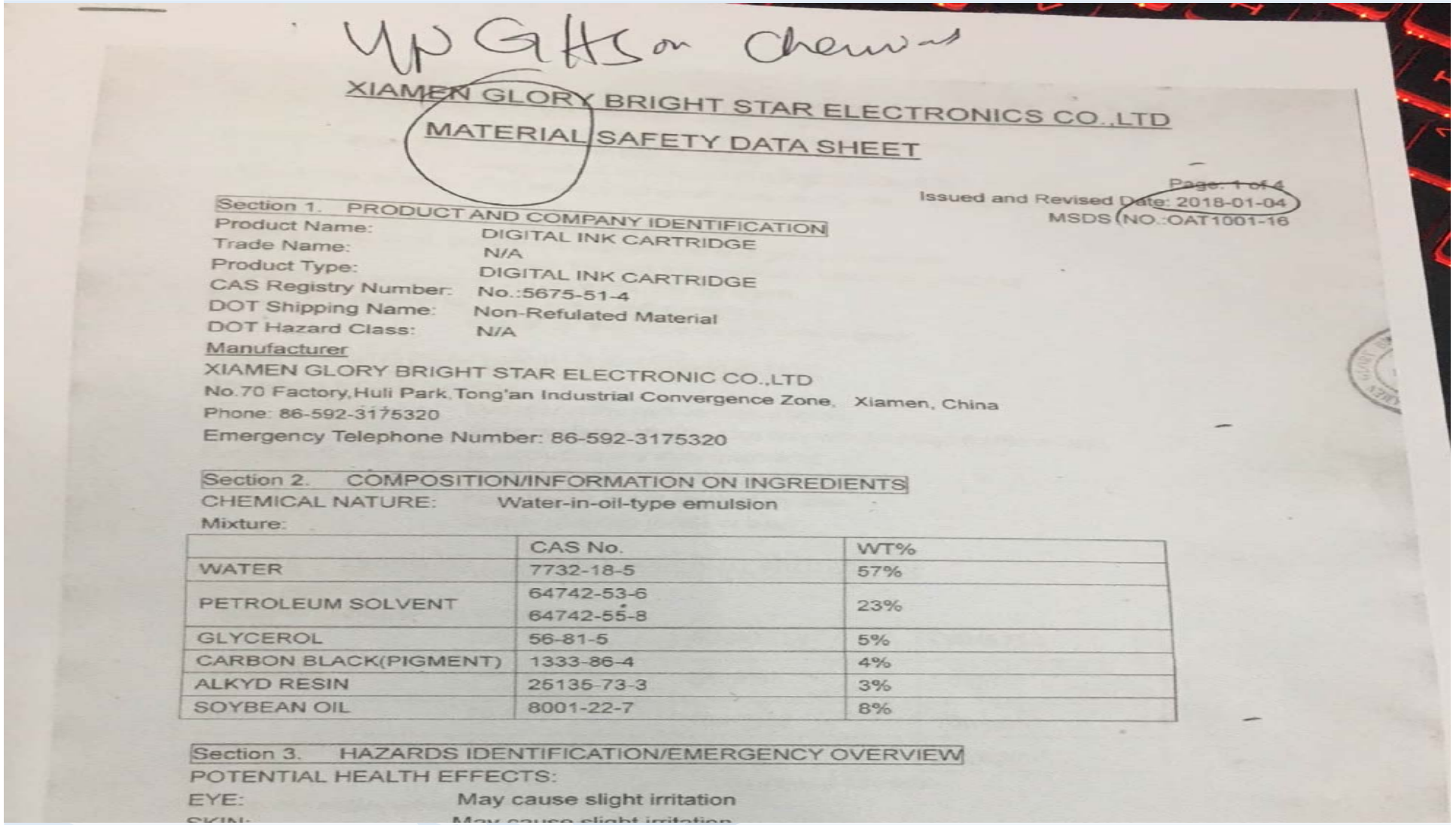
- Prepared by the supplier or manufacturer

DAO 2015 - 09

- MUST BE PRESENTED IN ENGLISH
- INFORMATION ON PREPARATION AND REVISION (e.g. PAGES AND DATE OF ISSUANCE, DATE OF REVISION AND REVISION NUMBER)
- UPDATING MUST BE FIVE (5) YEARS OR EARLIER
- COMPOSED OF 16 SECTIONS
- KEY/LEGEND OF ABBREVIATION AND ACRONYMS
- LITERATURE REFERENCES OR SOURCES OF DATA COMPILED

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



YP Gifts or Chemwa

XIAMEN GLORY BRIGHT STAR ELECTRONICS CO.,LTD

MATERIAL SAFETY DATA SHEET

Page: 1 of 4

Issued and Revised Date: 2018-01-04

MSDS NO.:OAT1001-16

Section 1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: DIGITAL INK CARTRIDGE
Trade Name: N/A
Product Type: DIGITAL INK CARTRIDGE
CAS Registry Number: No.:5675-51-4
DOT Shipping Name: Non-Refulated Material
DOT Hazard Class: N/A

Manufacturer

XIAMEN GLORY BRIGHT STAR ELECTRONIC CO.,LTD
No.70 Factory,Huli Park,Tong'an Industrial Convergence Zone, Xiamen, China
Phone: 86-592-3175320
Emergency Telephone Number: 86-592-3175320

Section 2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NATURE: Water-in-oil-type emulsion
Mixture:

	CAS No.	WT%
WATER	7732-18-5	57%
PETROLEUM SOLVENT	64742-53-6 64742-55-8	23%
GLYCEROL	56-81-5	5%
CARBON BLACK(PIGMENT)	1333-86-4	4%
ALKYD RESIN	25135-73-3	3%
SOYBEAN OIL	8001-22-7	8%

Section 3. HAZARDS IDENTIFICATION/EMERGENCY OVERVIEW

POTENTIAL HEALTH EFFECTS:

EYE: May cause slight irritation

SKIN: May cause slight irritation

SUSPECTED TAMPERED/ALTERED SDS

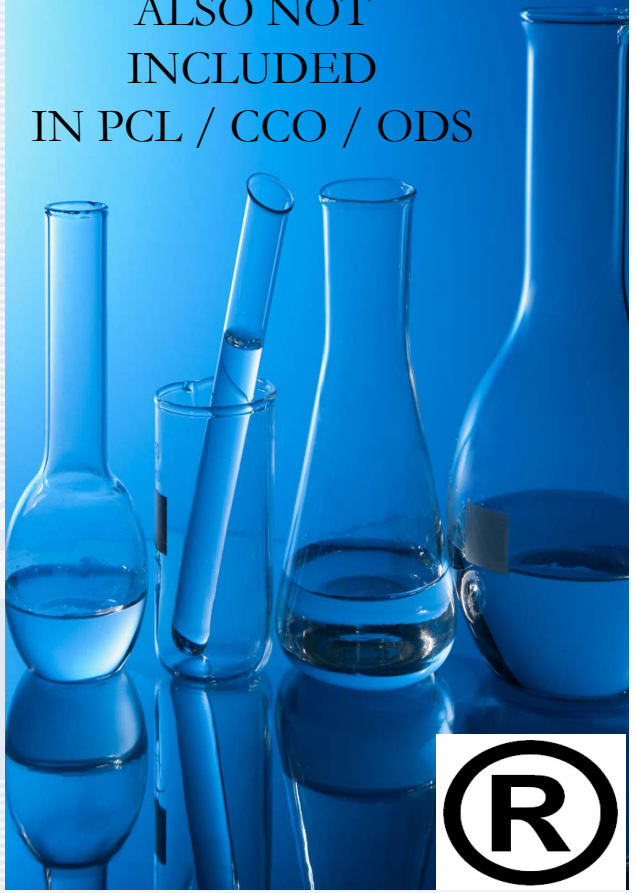
CAS RN

- **Unique numerical identifier** assigned by the Chemical Abstract Service (CAS) to every chemical substance or a **unique identifying number** assigned to a particular chemical or chemical substance.

CI INCLUDED IN PICCS BUT NOT INCLUDED IN PCL / CCO / ODS

CI INCLUDED IN PICCS ALSO INCLUDED IN PCL / CCO / ODS

CI NOT INCLUDED IN PICCS ALSO NOT INCLUDED IN PCL / CCO / ODS



TREATMENT ON CHEMICAL GOODS

IDENTIFICATION OF ODS (1)

BY COLOUR CODE : R-134a = Light Blue; R-22 = Light Green

- PRACTICALLY IMPOSSIBLE SINCE THE COLOUR CODES RELATED TO ODS CONTAINER COLOURS ARE COUNTRY-SPECIFIC
- COLOUR CODES IN THE CUSTOMS TRAINING MANUAL SHOULD BE TREATED ONLY AS EXAMPLE

IDENTIFICATION OF HCFCs & HFCs

GAS OR LIQUID AT RoomTemperature

PRESSURISED CYLINDER = GAS

– DRUM, BARREL OR BOTTLE = LIQUID

GAS OR LIQUID AT R.T. (CONTINUED)

- THE MOST COMMON ODS GASES AT R.T. :
  - HCFC – 22
  - METHYL BROMIDE (DANGEROUS!)
  - HALONS
- NON-ODS GASES TRANSPORTED IN SIMILAR CYLINDERS : FLAMMABLE GASES, for example: PROPANE, BUTANE, HFCs

IDENTIFICATION OF HCFCs & HFCs

BY TEMPERATURE – PRESSURE CHART

- EACH ODS HAS SPECIFIC VAPOUR PRESSURE AT GIVEN TEMPERATURE
- THE TEMPERATURE / VAPOUR PRESSURE CHARTS CAN BE USED FOR ODS IDENTIFICATION

NOTICE

THIS METHOD IS NOT RECOMMENDED SINCE:

- SPECIAL PRESSURE GAUGE IS NEEDED FOR SUCH TESTING
- SAMPLING METHODS NEEDS EXPERIENCE
- RESULTS ARE NOT RECOMMENDED DUE TO ITS LOW CERTAINTY AND OTHER DRAWBACKS
- BIG ERRORS ARE POSSIBLE

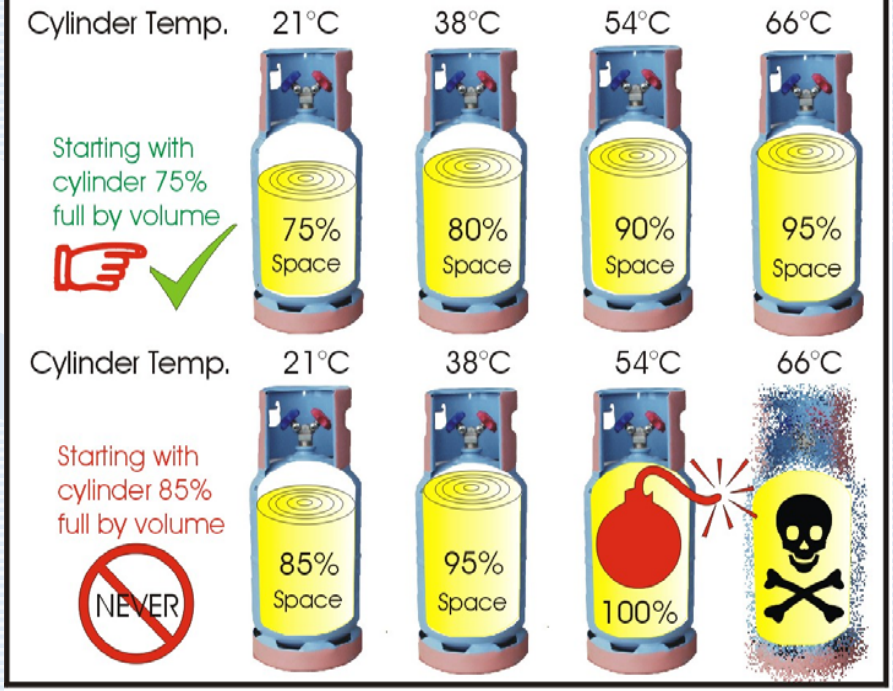
REFRIGERANT GAS RECOVERY & CONTAINMENT

Safety comes first. Read all safety information for the safety handling of refrigerant including the Material Safety Data Sheet provided by your refrigerant supplier. Never operate unit in an explosive enviroment. Wear safety glasses and protective gloves. Work area must be well ventilated.

! Only use approved cylinders.
! Do not exceed the working pressure of each cylinder.
! Safety codes recommend that closed tanks not be

filled over 80% of volume with liquid.
Never transport an overfilled cylinder

Refrigerant expands when it gets warm and may cause tank to
- explode -
if overfilled.



Consider THIS!

IDENTIFYING WITH REFRIGERANT IDENTIFIERS

- SMALL PORTABLE UNITS
- CAN IDENTIFY A FEW SELECT ODS AND NON-ODS GASES
- CAN BE USED BY ANYONE; NO DANGER
- RESULTS GENERALLY RELIABLE
- PRINTOUT OF THE RESULTS CAN BE TAKEN


Neutronics, Inc.
Refrigerant
Identifier
R134a = 0.0%
R12 = 0.0%
R22 = 0.0%
HC
Tested R12.....
Conclusion:
R12t FAIL<<<<<
(Date)
(Technician)
FAIL
R12 0.0%
ULTIMA ID™
Refrigerant Identifier
NEUTRONICS
AUTOMOTIVE

IDENTIFICATION OF HCFCs & HFCs

BY CHEMICAL ANALYSIS

LIQUID

SAMPLE ➔ TO BE TAKEN ONLY BY A PROFESSIONAL (CHEMICAL ENGR. OR CHEMIST)

GAS

SAMPLE ➔ ASK CHEMIST/ CHEMICAL ENGINEER TO TAKE SAMPLE OR SEND THE CYLINDER TO THE SPECIALISED LABORATORY

NOTICE

- *NEVER USE IDENTIFIER FOR CHECKING CYLINDERS WITH METHYL BROMIDE (!)*

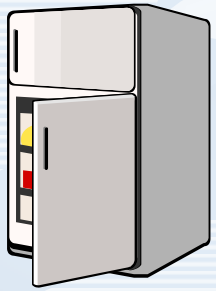
IDENTIFICATION OF ODS-CONTAINING PRODUCTS (1)

NOTICE

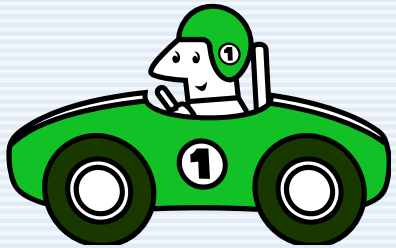
- PRODUCTS = EQUIPMENT AND OTHER GOODS THAT CONTAIN ODS
- BY TYPE OF PRODUCT :

  TYPICAL PRODUCTS THAT MAY CONTAIN ODS

  – REFRIGERATION EQUIPMENT

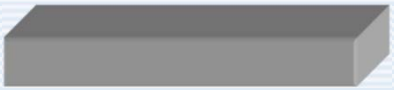


  – MOBILE AIR CONDITIONING EQUIPMENT



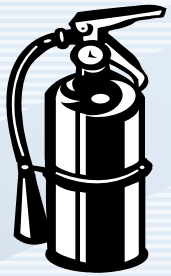
IDENTIFICATION OF ODS-CONTAINING PRODUCTS (2)

- BY TYPE OF PRODUCT (cont) :
  TYPICAL PRODUCTS THAT MAY CONTAIN ODS (cont)



  - FOAMS

  - AEROSOLS



  - FIRE EXTINGUISHERS

  - PRE-POLYMERS,SOLVENTS, PESTICIDES, PAINTS AND SIMILAR PRODUCTS

IDENTIFICATION OF ODS and HFCs-CONTAINING PRODUCTS (3)

BY LABEL

NO INTERNATIONAL LABELLING SYSTEM, BUT :

- REFRIGERATORS AND CAR/TRUCK AIR CONDITIONING SYSTEMS HAVE LABELS ATTACHED TO COMPRESSORS WHERE THE NAME OF REFRIGERANT (e.g. R-12) AND COMPRESSOR CAPACITY IS SHOW
- FIRE EXTINGUISHERS HAVE LABELS WHERE IT IS SHOWN WHAT KIND OF EXTINGUISHING AGENT IS INSIDE (e.g.HALON)
- AEROSOL CANS OR SPRAYS HAVE LABELS WHERE IT IS USUALLY WRITTEN WHETHER THIS PRODUCT IS CFC-FREE (e.g. “OZONE FRIENDLY” OR “CFC-FREE”)

IDENTIFICATION OF ODS & HFCs-CONTAINING PRODUCTS (3)

NOTICE

USUALLY IT IS IMPOSSIBLE TO IDENTIFY BY LABEL THE ODS-CONTAINING :

- FOAMS – USUALLY NOT LABELLED
- PRE-POLYMERS, SOLVENTS, PESTICIDES, PAINTS, etc. FOR WHICH ONLY TRADE NAMES MAY BE SHOWN ON THE LABEL

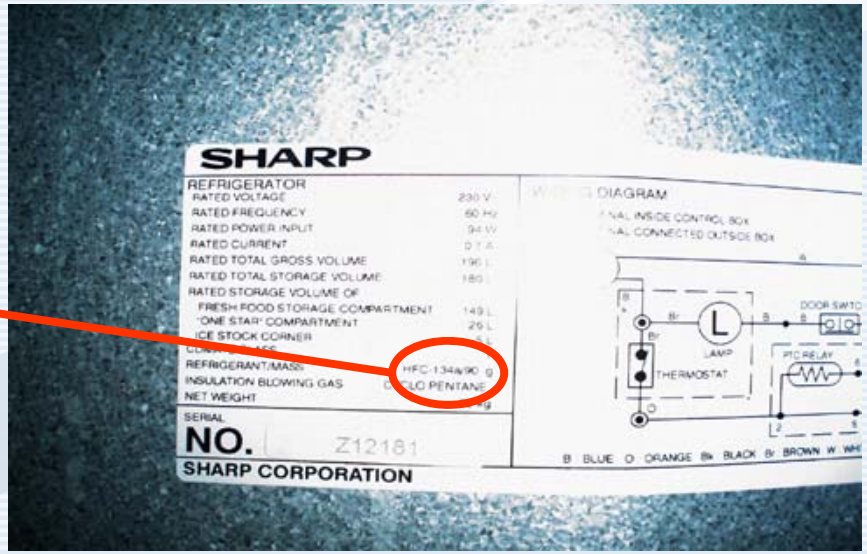
IDENTIFICATION OF REFRIGERANTS

- DATA PLATE, NAME PLATE/LABEL
- COLOR CODING
- CYLINDER SIGNAGE/TAG
- PT CHART
- ELECTRONIC REFRIGERANT IDENTIFIER

DATA PLATE, NAME PLATE/LABEL

IDENTIFICATION OF REFRIGERANTS

- **DATA PLATE**



IDENTIFICATION OF REFRIGERANTS

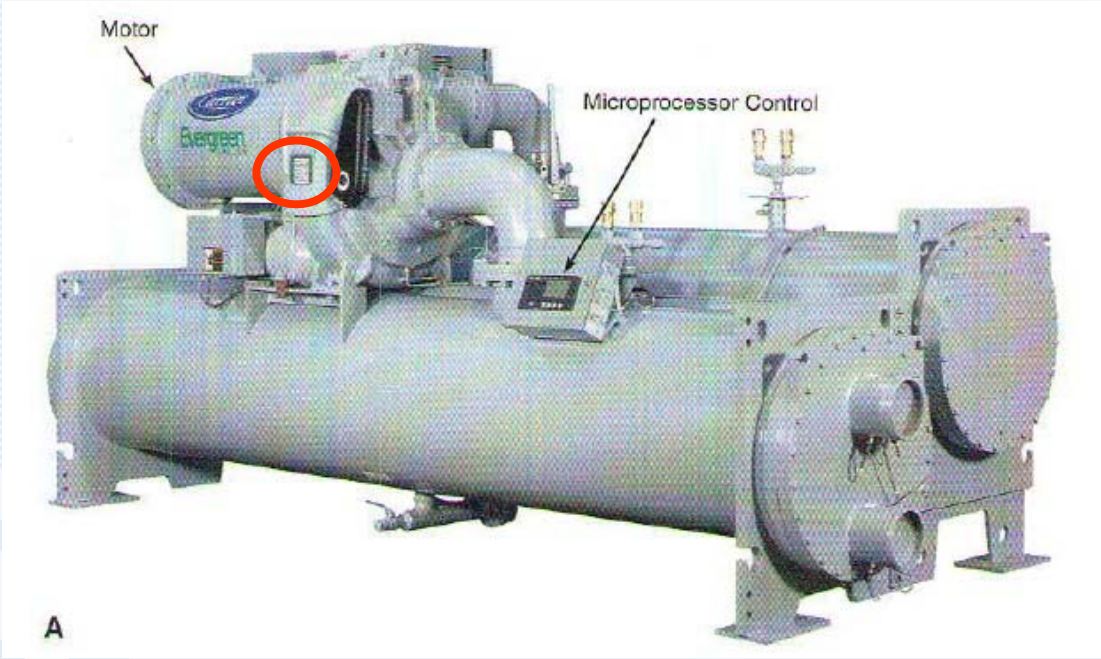
- DATA PLATE

IDENTIFICATION OF REFRIGERANTS

- **METAL PLATE/LABEL ON COMPRESSOR**

IDENTIFICATION OF REFRIGERANTS

- **METAL PLATE/LABEL ON COMPRESSOR**



IDENTIFICATION OF REFRIGERANTS

- **METAL PLATE/LABEL ON COMPRESSOR (CAR AC)**

(side of the compressor)

(back of the compressor)

TYPE OF REFRIGERANT IN THE SYSTEM (VISUAL)

IDENTIFICATION OF REFRIGERANTS

- **DATA LABEL (EXPANSION VALVE)**

Green: R22

yellow
R12

Blue: R-404A

COLOR CODING

HFCs

R23
- 5 lb
- 9 lb
- 20 lb
- 70 lb

OIL:
- Polyol Ester

APPLICATION:
- Very Low Temp. Refrig.

Replacement For: R13 & R503

R134a
- 12 oz
- 30 lb
- 125 lb
- 875 lb
- 1,750 lb
- 40,000 lb Bulk

OIL:
- Polyol Ester

APPLICATION:
- Med. Temp. Refrig.
- Air Conditioning

Replacement For: R12

R404A
(FX70/HP62)
R125/143a/134a
(44/52/4%)
- 24 lb
- 100 lb
- 1,300 lb

OIL:
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.
- Med. Temp. Refrig.

Replacement For: R502

R407A
(Klea 60)
R32/125/134a
(20/40/40%)
- 25 lb
- 100 lb

OIL:
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.
- Med. Temp. Refrig.

Replacement For: R502

R407B
(Klea 61)
R32/125/134a
(10/70/20%)
- 25 lb
- 100 lb

OIL:
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.
- Med. Temp. Refrig.

Replacement For: R502

R407C
(Klea 66/
SUVA 9000)
R32/125/134a
(23/25/52%)
- 25 lb
- 100 lb

OIL:
- Polyol Ester

APPLICATION:
- Air Conditioning

Replacement For: R22

R410A
(AZ 20)
R32/125
(50/50%)
- 25 lb
- 100 lb
- 1,450 lb

OIL:
- Polyol Ester

APPLICATION:
- Air Conditioning

Replacement For: R22

R507
(AZ 50)
R125/143a
(50/50%)
- 25 lb
- 100 lb
- 1,300 lb

OIL:
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.
- Med. Temp. Refrig.

Replacement For: R502

R508B
R23/116
(46/54%)
- 10 lb
- 20 lb
- 70 lb

OIL:
- Polyalpha Olefin
- Alkylbenzene
- Mineral

APPLICATION:
- Very Low Temp. Refrig.

Replacement For: R503 & R13

HCFCs

R22
- 12 oz
- 30 lb
- 50 lb
- 125 lb
- 875 lb
- 1,750 lb
- 40,000 lb bulk

OIL:
- Mineral
- Alkylbenzene
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.
- Med. Temp. Refrig.
- Air Conditioning

R123
- 100 lb
- 200 lb
- 650 lb
- 40,000 lb bulk

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Low Pressure Centrifugal Chillers

Replacement For: R11

R124
- 30 lb
- 145 lb
- 2,000 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- High Ambient Refrig.

Replacement For: R114

R401A
(MP39)
R22/152a/124
(53/13/34%)
- 30 lb
- 125 lb

OIL:
- Alkylbenzene
- Polyol Ester

APPLICATION:
- Med. Temp. Refrig.

Replacement For: R12

R401B
(MP66)
R22/152a/124
(61/11/28%)
- 30 lb
- 125 lb

OIL:
- Alkylbenzene
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.

Replacement For: R12

R402A
(HP80)
R125/290/22
(60/2/38%)
- 27 lb
- 110 lb

OIL:
- Alkylbenzene
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.
- Med. Temp. Refrig.

Replacement For: R502

HCFCs

R402B
(HP81)
R125/290/22
(38/2/60%)
- 13 lb

OIL:
- Mineral
- Alkylbenzene
- Polyol Ester

APPLICATION:
- Ice Machines

Replacement For: R502

R403B
(ISCEON 69L)
R290/22/218
(5/56/39%)
- 30 lb
- 125 lb
- 875 lb

OIL:
- Mineral
- Alkylbenzene
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.

Replacement For: R13 & R503

R406A*
(GHG12)
R22/600a/142b
(55/4/41%)
- 25 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Stationary R12 Refrig.

Replacement For: R12

R408A
(FX10)
R125/143a/22
(7/46/47%)
- 24 lb
- 100 lb

OIL:
- Mineral
- Alkylbenzene
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.
- Med. Temp. Refrig.

Replacement For: R502

R409A
(FX56)
R22/124/142b
(60/25/15%)
- 30 lb
- 125 lb

OIL:
- Mineral
- Alkylbenzene
- Polyol Ester

APPLICATION:
- Low Temp. Refrig.
- Med. Temp. Refrig.

Replacement For: R12

CFCs

R11
- 100 lb
- 200 lb
- 650 lb
- 1,100 lb
- 2,200 lb
- 40,000 lb bulk

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Centrifugal Chillers

R12
- 12 oz
- 30 lb
- 50 lb
- 145 lb
- 1,000 lb
- 2,000 lb
- 40,000 lb bulk

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Auto Air Conditioning
- Med. Temp. Refrig.
- High Temp. Refrig.

R13
- 5 lb
- 9 lb
- 23 lb
- 60 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Very Low Temp. Refrig.

R13b1
- 10 lb
- 25 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Very Low Temp. Refrig.

R113
- 100 lb
- 200 lb
- 650 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Commercial & Industrial Air Conditioning

R114
- 30lb
- 150 lb
- 875 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Industrial Process Cooling
- Centrifugal Chillers

R500
- 30 lb
- 50 lb
- 125 lb
- 875 lb
- 1,750 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Commercial Air Conditioning

R502
- 30 lb
- 50 lb
- 125 lb
- 875 lb
- 1,750 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Med. Temp. Refrig.
- Low Temp. Refrig.

R503
- 5 lb
- 9 lb
- 20 lb
- 50 lb

OIL:
- Mineral
- Alkylbenzene

APPLICATION:
- Very Low Temp. Refrig.

Below are some notable blended HFC mixtures. There exist many more (see list of refrigerants). All R-400 (R-4xx) and R-500 (R-5xx) hydroflurocarbons are blends, as noted above.

R-401A is a HCFC zeotropic blend of R-22, R-152a, and R-124. It is designed as a replacement for R-12.[8]

R-404A is a HFC "nearly azeotropic" blend of 52 wt.% R-143a, 44 wt.% R-125, and 4 wt.% R-134a. It is designed as a replacement of R-22 and R-502 CFC. Its boiling point at normal pressure is -46.5 °C, its liquid density is 0.485 g/cm^3.[9]

R-406A is a zeotropic blend of 55 wt.% R-22, 4 wt.% R-600a, and 41 wt.% R-142b.

R-407A is a HFC zeotropic blend of 20 wt.% R-32, 40 wt.% R-125, and 40 wt.% R-134a.[10]

R-407C is a zeotropic hydrofluorocarbon blend of R-32, R-125, and R-134a. The R-32 serves to provide the heat capacity, R-125 decreases flammability, R-134a reduces pressure.[11]

R-438A another HFC blended replacement for R-22, with five components: R-32, R-125/R-134a, R-600, and R-601a, blended in respective ratios 8.5+.5,-1.5%; 45±1.5%; 44.2±1.5%; 1.7+.1,-.2%; 0.6+.1,-.2%. The mean "mo"lecular weight of this mix is 99, resulting in the tradename ISCEON MO99 from manufacturer DuPont (a line of blended HFC products developed initially by Rhodia, and sold to DuPont).[16][17]

R-500 is an azeotropic blend of 73.8 wt.% R-12 and 26.2 wt.% of R-152a.

R-502 is an azeotropic blend of R-22 and R-115.

IDENTIFICATION OF REFRIGERANTS

- **CYLINDER COLOR CODING**

IDENTIFICATION OF REFRIGERANTS

- **CYLINDER COLOR CODING**

IDENTIFICATION OF REFRIGERANTS

- **CYLINDER COLOR CODING**

CYLINDER SIGNAGE/TAG

IDENTIFICATION OF REFRIGERANTS

- **CYLINDER INDICATOR (Flammability)**

Flammability symbol

IDENTIFICATION OF REFRIGERANTS

- **TAG/LABEL IN A DRUM**

IDENTIFICATION OF REFRIGERANTS

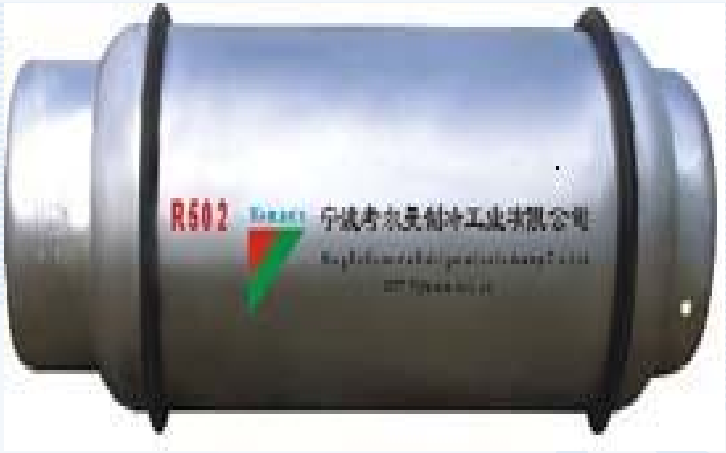
- **TAG/LABEL IN TANK**

TONNER TANK

ISO-TANK

IDENTIFICATION OF REFRIGERANTS

- **TAG/LABEL IN TANK**



TONNER TANK

ISO-TANK

IDENTIFICATION OF REFRIGERANTS

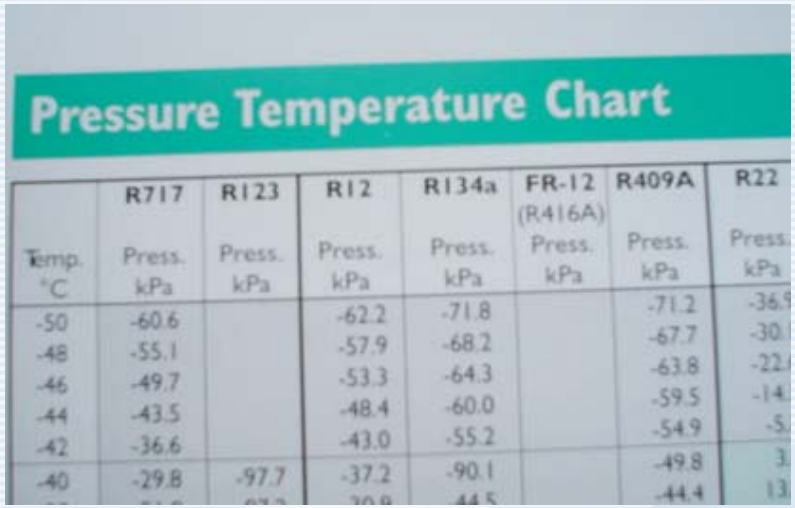
- **REFRIGERANT SAMPLE CHECKING**

ONLY TRAINED PERSONNEL MUST PERFORM THE SAMPLE CHECKING OF ANY REFRIGERANT CYLINDER

TRANSFERRING OF REFRIGERANT FROM TONNER OR ISO-TANK IS DANGEROUS!!!

IDENTIFICATION OF REFRIGERANTS

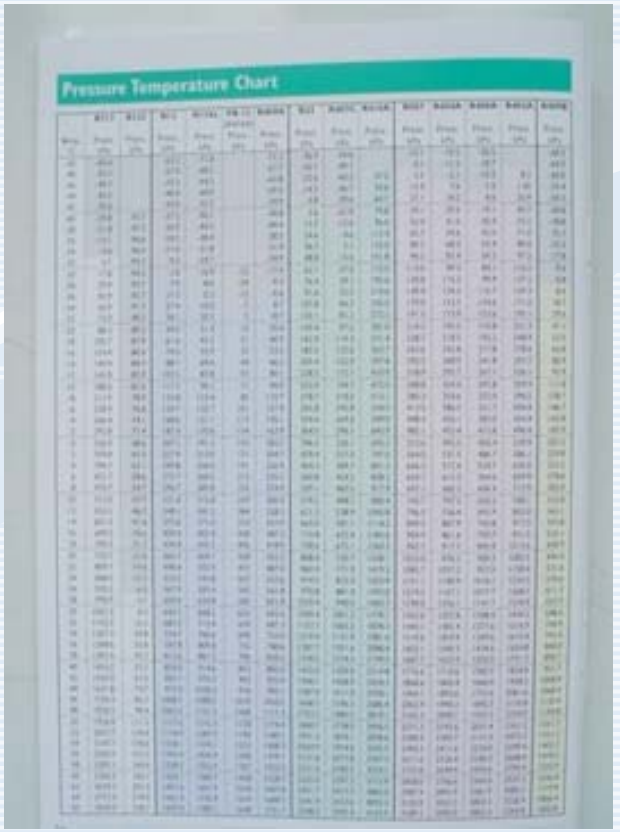
- **PRESSURE-TEMPERATURE CHART**



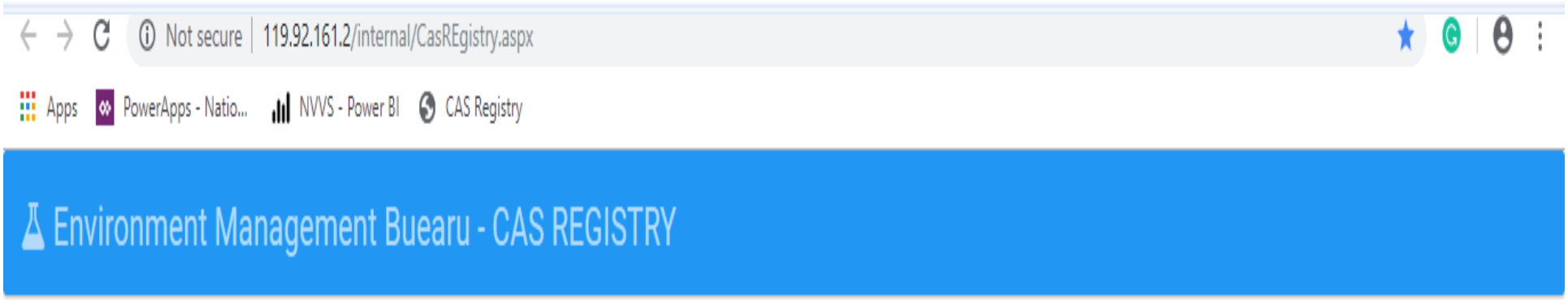
Pressure Temperature Chart

Temp. °C	R717 Press. kPa	R123 Press. kPa	R12 Press. kPa	R134a Press. kPa	FR-12 (R416A) Press. kPa	R409A Press. kPa	R22 Press. kPa
-50	-60.6		-62.2	-71.8		-71.2	-36.9
-48	-55.1		-57.9	-68.2		-67.7	-30.1
-46	-49.7		-53.3	-64.3		-63.8	-22.4
-44	-43.5		-48.4	-60.0		-59.5	-14.
-42	-36.6		-43.0	-55.2		-54.9	-5.
-40	-29.8	-97.7	-37.2	-90.1		-49.8	3.
						-44.4	13.

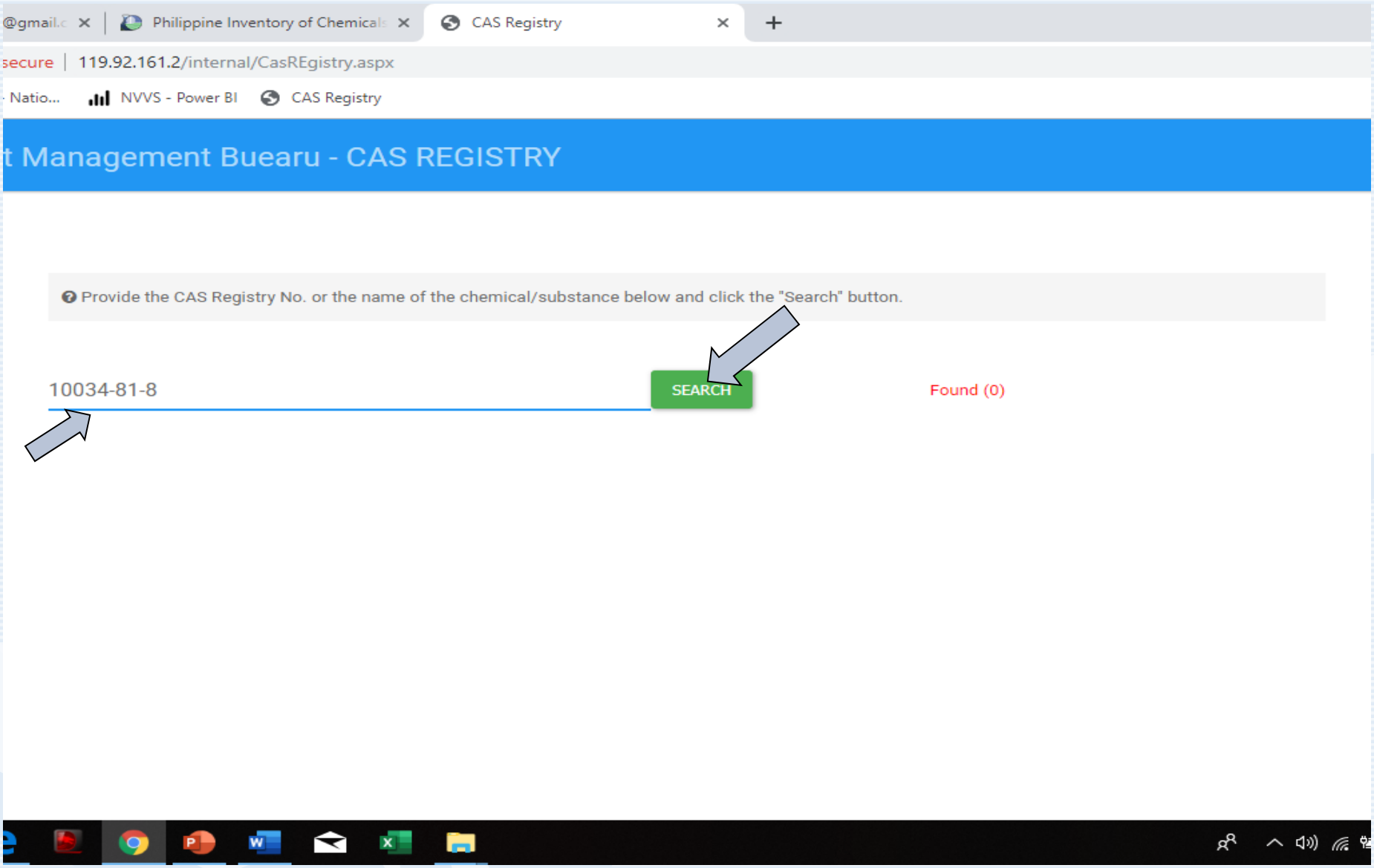
ONLY TRAINED PERSONNEL MUST PERFORM THE IDENTI-FICATION OF REFRIGERANT USING PT CHART



Pressure Temperature Chart



DENR-EMB WEBSITE
119.92.161.2/internal/CasREgistry.aspx



Encoded the CASRN in the search bar

@gmail.c | Philippine Inventory of Chemicals | CAS Registry

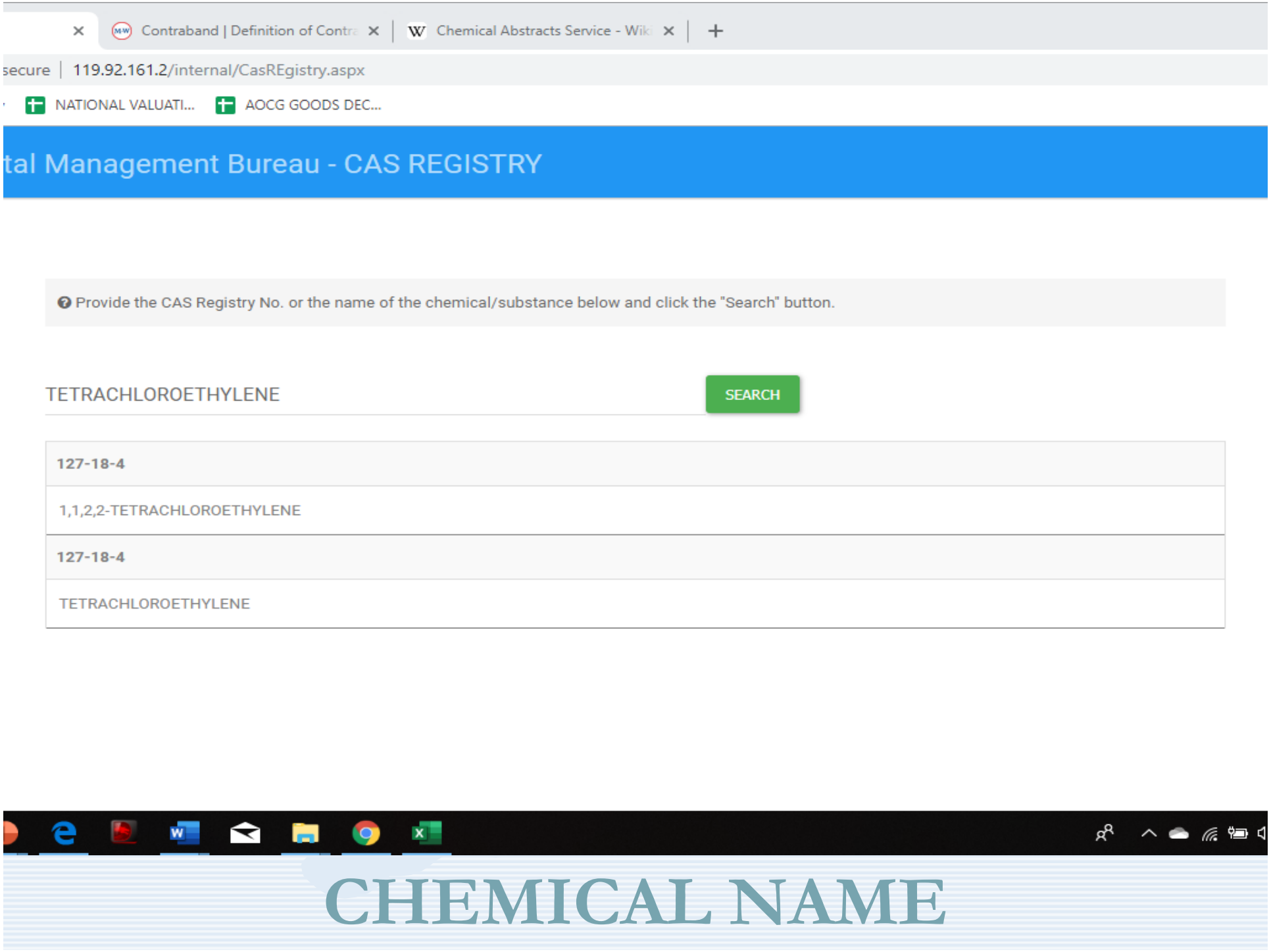
secure | 119.92.161.2/internal/CasREgistry.aspx

Natio... | NVVS - Power BI | CAS Registry

Provide the CAS Registry No. or the name of the chemical/substance below and click the "Search" button.

10034-81-8 SEARCH

10034-81-8
ANHYDRONE
10034-81-8
DEHYDRITE
10034-81-8
MAGNESIUM PERCHLORATE
10034-81-8
PERCHLORIC ACID, MAGNESIUM SALT



CHEMICAL NAME

Need to obtain permission from DENR first before importing into the Philippines. They are also subject to mandatory GHS SDSs and labelling.

58. 127-18-4 PERCHLOROETHYLENE

Alternatives to ODS

- Tetrafluoroethane (HFC-134a)
- Methylene Chloride or Dichloromethane
- Heptafluoropropane (HFC-227ea)
- Hexafluoropropane (HFC-236fa)
- Trifluoromethane (HFC-23)
- Tetrafluoromethane
- Hydrofluorocarbons (HFCs) blends

Ozone Depleting Substances (ODS)

- Chlorofluorocarbons (CFCs)
- Hydrochlorofluorocarbons (HCFCs)
- Halons
- Hydrobromofluorocarbons (HBFCs)
- Bromochloromethane
- 1,1,1-trichloroethane (methyl chloroform)
- Carbon tetrachloride
- Methyl Bromide

STRICT MONITORING OF OZONE DEPLETING SUBSTANCE (ODS)

7 OCTOBER 2019 MEMO

2019_10-037

DATE : October 7, 2019

You are hereby instructed to strictly monitor and issue the corresponding Warrant of Seizure and Detention for the importation of the following **Ozone Depleting Substances (ODS)** which are banned/prohibited under DENR Administrative Order No. 2013-25 "Revised Regulations on the Chemical Control Order for ODS" issued pursuant to Republic Act No. 6969, the Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990:

1. Chlorofluorocarbons(CFCs)
2. Halons
3. Carbon tetrachloride (CTC)
4. Methyl chloroform
5. Methyl bromide (except those covered by Quarantine and Pre-Shipment Permit issued by Fertilizer and Pesticide Authority pursuant to FPA Memorandum Circular No. 03 dated February 14, 2017, the Revised Guidelines for Methyl Bromide Transactions)

Require the presentation of Pre-Shipment Importation Clearance issued by the Environmental Management Bureau (EMB) for the following **Regulated Ozone Depleting Substances Alternatives** under EMB Memorandum Circular No. 2005-03 "List of Alternatives to Ozone Depleting Substances", issued pursuant to Republic Act No. 6969, and DENR Administrative Order No. 1992-29, the Implementing Rules and Regulations of Republic Act No. 6969:

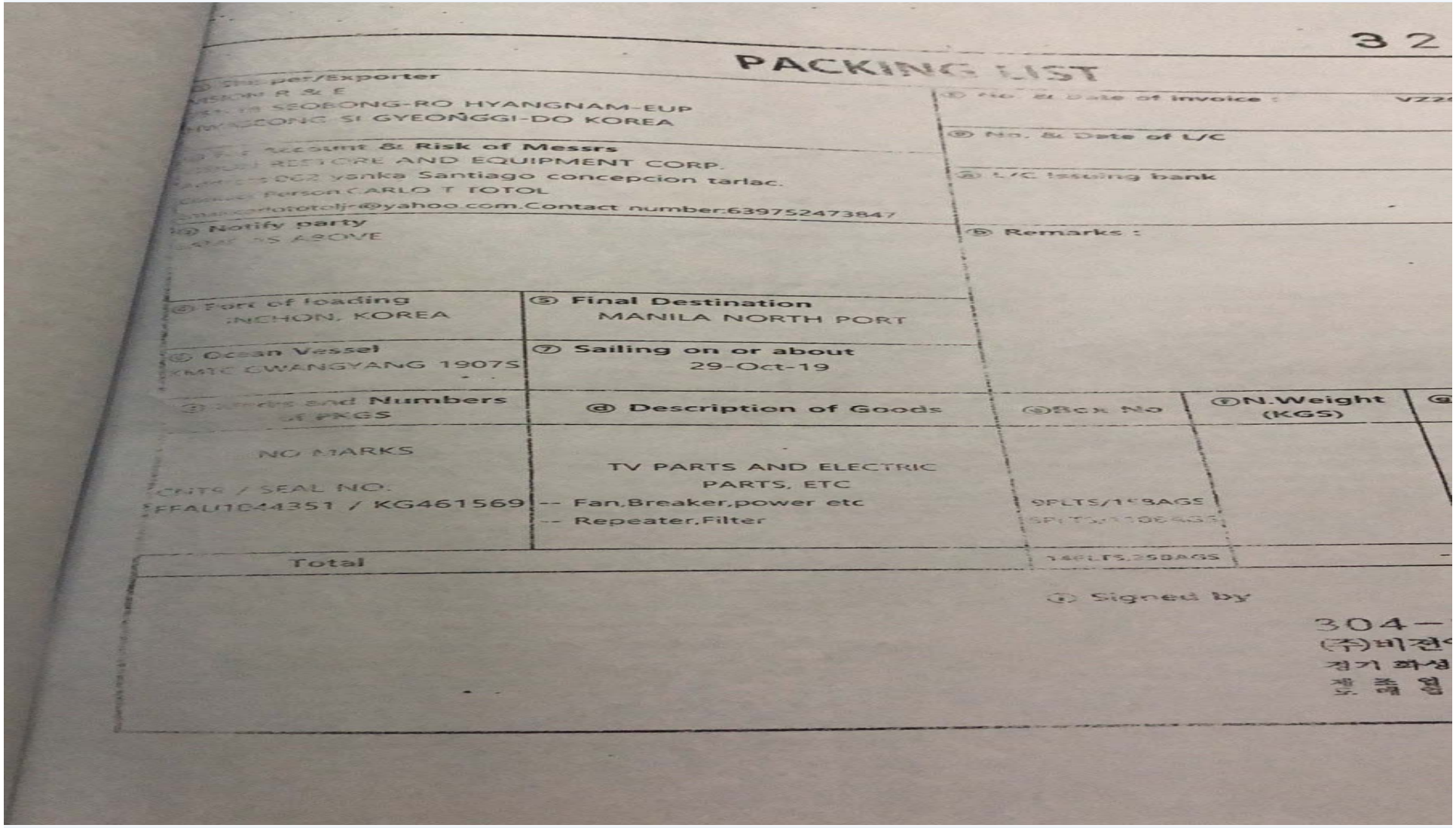
1. Tetrafluoroethane (HFC-134a)
2. Methylene Chloride or Dichloromethane
3. Heptafluoropropane (HFC-227ea)
4. Hexafluoropropane (HFC-236fa)
5. Trifluoromethane (HFC-23)
6. Tetrafluoromethane
7. Hydrofluorocarbons (HFCs) blends

For your appropriate action and strict compliance.

EXAMPLE

INVOICE AS INDICATOR

Invoice and/or Packing List



PACKING LIST

32

Shipper/Exporter
SEOBONG-RO HYANGNAM-EUP
HWASEONG SI GYEONGGI-DO KOREA

Account & Risk of Messrs
RESTORE AND EQUIPMENT CORP.
Yanka Santiago concepcion tarlac.
Person CARLO T TOTOL
Contact number:639752473847

Notify party
SAME AS ABOVE

Port of loading
INCHON, KOREA

Final Destination
MANILA NORTH PORT

Ocean Vessel
KMTC GWANGYANG 1907S

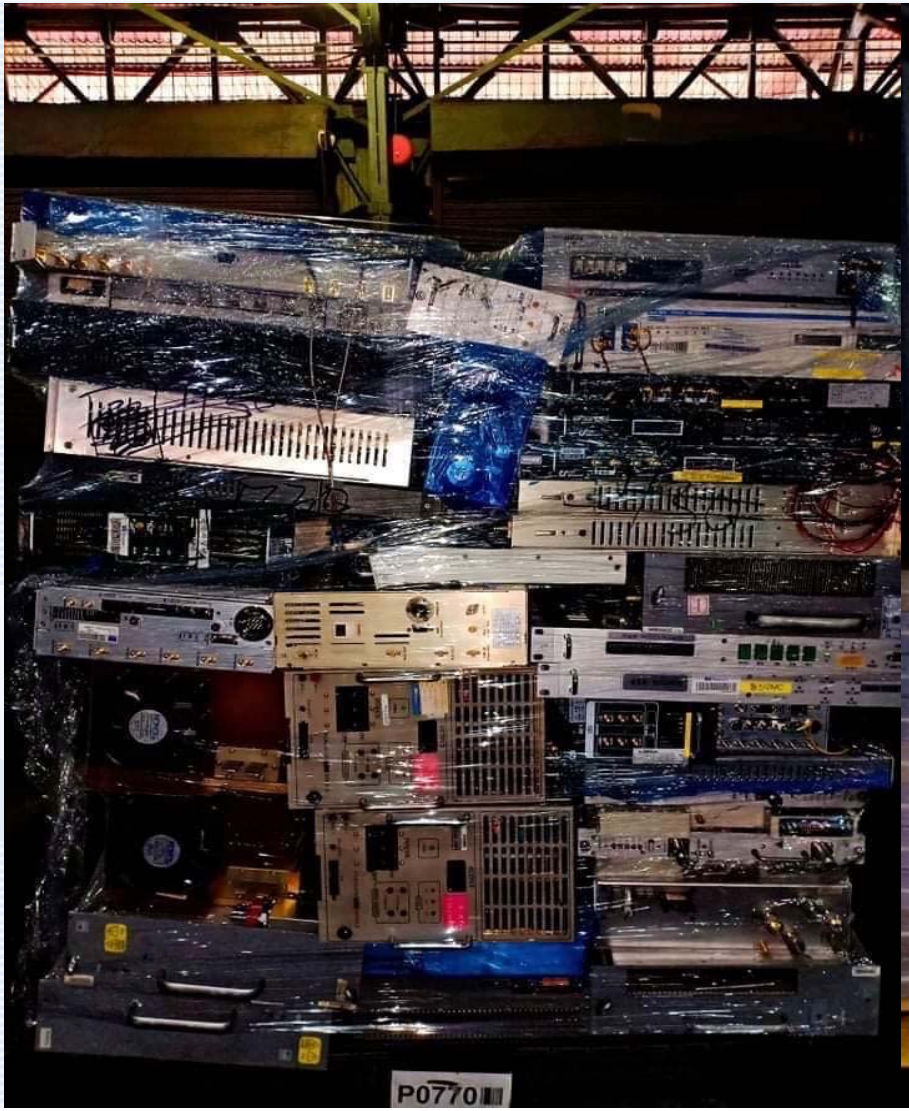
Sailing on or about
29-Oct-19

Marks and Numbers of PKGS	Description of Goods	Box No	N.Weight (KGS)
NO MARKS CNTR / SEAL NO. FFAU1044351 / KG461569	TV PARTS AND ELECTRIC PARTS, ETC -- Fan,Breaker,power etc -- Repeater,Filter	9PLTS/118BAGS	
Total		146PLTS,258AGS	

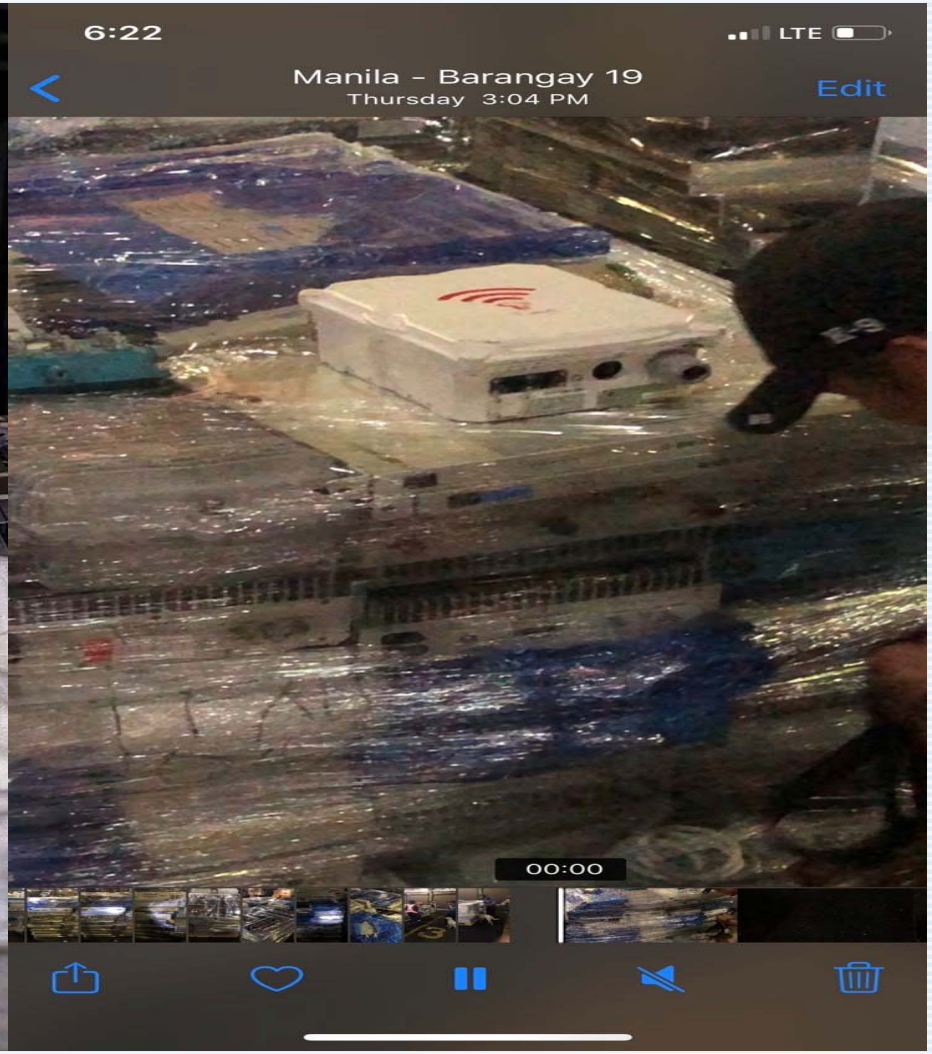
Signed by

304-
(주)비전
경기 화성

Actual Photos



Actual Photos



Actual Photos

DESCRIPTION GOODS

TV PARTS AND
ELECTRIC PARTS, ETC.

- Fan, Breaker, power, etc.
- - Repeater, Filter
- **VALUE**

IMPORTANT NOTE:

REFER TO THE EPCD

Relevant 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
- 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

Relevant 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 2017-007: Clarification on the Coverage of Laboratory Facilities under DAO 2007-23 (PCL)
- EMB MC 2005-03: List of Alternative ODS

PMPIN and PICCS Related Regulations and Resources

- Republic Act 6969 - Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990
- http://www.emb.gov.ph/laws/toxic%20substances%20and%20hazardous%20wastes/ra6969.PDF
- Philippine Inventory of Chemicals and Chemical Substances (PICCS)
- http://emb.gov.ph/internal/CasREgistry.aspx

PMPIN and PICCS Related Regulations and Resources

- Official Introduction to PMPIN
- http://www.emb.gov.ph/portal/chemical/Permitings/Pre-ManufacturePre-ImportationNotification.aspx
- PMPIN Forms and Letter of Request for Certification
- http://www.emb.gov.ph/portal/chemical/Downloadables.aspx

PMPIN and PICCS Related Regulations and Resources

- Priority Chemical Lists Subject to Chemical Control Order.
- http://www.emb.gov.ph/portal/chemical/Permitings/PriorityChemicalList.aspx
- List of Substances Subject to Chemical Control Orders (CCO)
- http://www.emb.gov.ph/portal/chemical/Permitings/ChemicalControlOrder.aspx

Guidelines for GHS Implementation

- DENR Administrative Order 2015-09 Rules and the Procedures for the Implementation of the Globally Harmonized System (GHS)
- DENR Administrative Order 2015-09 GHS Guidance Manual

www.emb.gov.ph

Ezra Clark / OzonAction / UNEP

Training Manual for Customs and Enforcement Officers

www.customs.gov.ph

REFERENCES

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