SOURCES OF OZONE DEPLETING SUBSTANCES (ODS)...

Methyl Bromide – use in soil fumigation, quarantine preshipment treatment, maintenance of grass at golf course

CFCs in Refrigerators

CFCs in mobile air conditioning system

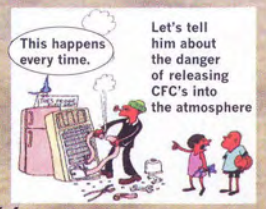
CFCs in Aerosol sprayer

HALON in Fire Extinguisher

CFCs in asthma patients' "metered dose inhalers"

Solvent in dry cleaning – (1,1,1 – TCA @ Methyl Chloroform)

WHAT SHOULD YOU DO TO PROTECT THE OZONE LAYER?



"Do not vent CFC, recover & recycle CFC"

"recover & recycle CFC"

As a user, buy or use ozone friendly products.

Have your CFC-12 Mobile Air-conditioning (MAC) system is serviced regularly by a trained technician at any service centre accredited by Department of Environment.

Do not vent any refrigerant from your CFC-12 MAC system. It is an offence under the Environmental Quality (Refrigerant Management) Regulations, 1999.

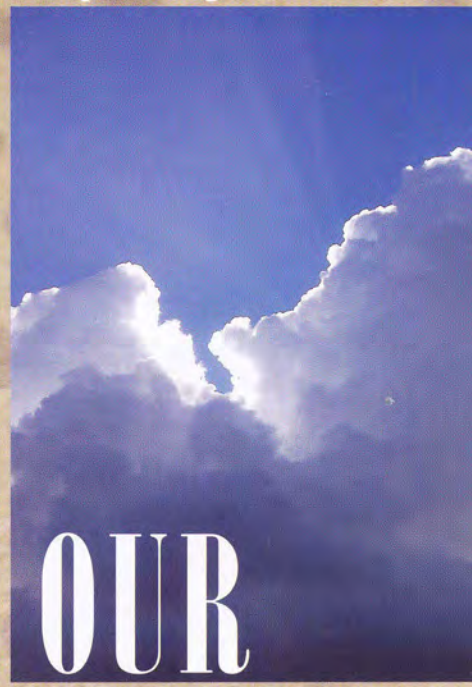
Any new installation of CFC-12 MAC is prohibited under the Environmental Quality (refrigerant Management) Regulations, 1999

The technician for the MAC service Centre should be accredited by Department of Environment and equipped with an approved refrigerant recovery and recycling machine.

Make sure that your HFC-134A MAC System is serviced at an accredited service centre by a trained technician to avoid unscrupulous practice of topping up your MAC with CFC-12 and being charged for the price of HFC-134A refrigerant.

Make sure that your HFC-134A MAC is not refilled with CFC-12 refrigerant because it will reduce the lifespan of your HFC-134A MAC compressor drastically or damage the MAC system due to unsuitability of the combination of CFC-12 refrigerant with the PAG oil used in the HFC-134A MAC system.

Stop Being A CFC User



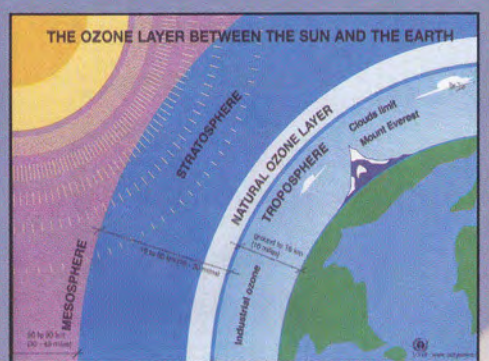
SAVE OUR OZONE LAYER

Ozone Protection Section, Air Division,
Department of Environment, Level 4,
Podium Block 3, Wisma Sumber Asli,
No 25, Persiaran Perdana, Presint 4,
62574 Putrajaya.

Tel: +603.8871.2000 / 2200
Fax: +603.8888.9987

DO YOU KNOW...

Our earth is protected by a thin ozone layer which filters out the harmful ultraviolet (UV) radiation. Ozone is a molecule that contains three atoms of oxygen and thus has the formula O3. Ozone occurs naturally in the Earth's upper atmosphere – 10 to 20 miles above the Earth's surface where it forms a protective layer that shields us from the sun's harmful ultraviolet rays. This beneficial ozone is gradually being destroyed by manmade chemicals. For people, overexposure to UV rays can lead to skin cancer, cataracts and weakened immune systems. Increased of UV can also lead to reduced crop yield and disruptions in the marine food chain.



Ozone Molecule Formation

$$UV \rightarrow O_2 \longrightarrow O + O$$
$$O + O_2 \longrightarrow O_3$$

Ozone Molecule Breakdown

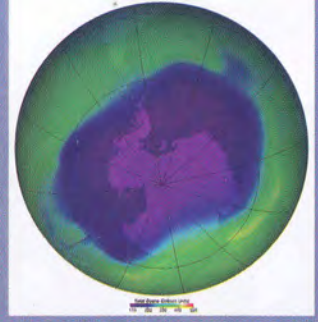
$$UV \rightarrow O_3 \longrightarrow O_2 + O$$

Destruction of Ozone in the Presence of Ozone Depleting Substances (e.g. Chlorine)

$$UV \rightarrow CFCl_3 \longrightarrow CFCl_2 + Cl$$
$$Cl + O_3 \longrightarrow ClO + O_2$$
$$ClO + O \longrightarrow Cl + O_2$$

EFFECTS
ON OZONE LAYER DEPLETION

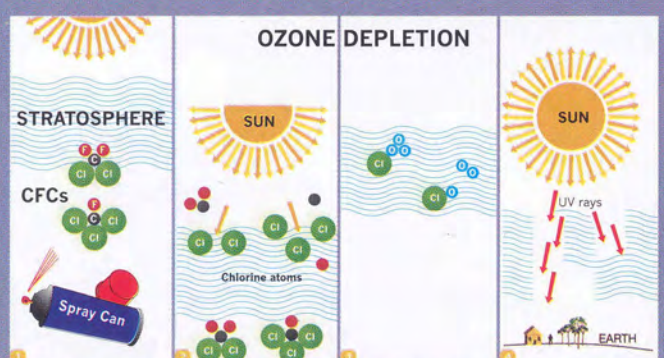
What's CFC?



CFC or Chlorofluorocarbon is a chemical compound that contains atoms of carbon, fluorine and chlorine. CFCs can deplete the ozone layer and reduce its ability to protect against the ultraviolet radiation consequently. The increase of ultraviolet radiation from the sun will render serious negative effects to human and ecosystem such as increase cases of skin cancer, cataract and reduced immunity.CFCs was the major cause of ozone depletion in the upper atmosphere.

Hydrochlorofluorocarbons (HCFCs) are similar to CFCs but less destructive to ozone. They are used as transition replacements for CFCs, but are to be phased out by the year 2030.

Hydrochlorofluorocarbons (HCFCs) do not have any potential for the destruction of ozone/ozone friendly.



CFCs are released in the air and travel up to the stratosphere.

CFCs are hit and broken by the sun's UV rays in the stratosphere. Chlorine atoms are released.

The chlorine atoms hit and break the ozone molecules that form our protective ozone layer. A chlorine atom can spend a hundred tears breaking ozone molecules in the stratosphere.

While the ozone layer is depleted, more UV rays can go through and harm us.