OZONE FRIENDLY PRODUCTS

Alternative ozone-friendly products are now manufactured widely in all the industrialized countries under both well-known and other brand names. Many developing countries such as India, China, Brazil, etc. have begun to manufacture ozone-friendly products. The suppliers and traders are now well aware of the distinction between CFC products and ozone-friendly products.

Many of these products have labels indicating that they are ozone-friendly. Even if they do not have such labels, verification of the contents, normally detailed on the product itself or in the brochure attached to the product, will show whether it contains CFCs or ozone-friendly alternatives. Given below are the current alternatives to CFCs in products of each sector.

1. Refrigeration Sector
   (a) New refrigeration units
      The alternatives are HFC134a, Hydrocarbons, HFC blends, HCFC blends, HCFC 22, Ammonia.
   (b) Air-cooled air conditioning units
      HFC 134a, HFC blends
   (c) Chiller equipment
      HFCs, HCFC and HFC blends.
   (d) Mobile Air Conditioners
      HCFC blends, HFC-134a.

2. Foam Sector
   For foams, zero ODP alternatives include carbon dioxide, hydrocarbons, HFC-152a or HFC-134a. In some markets, HCFCs are used for rigid thermal insulating foams.

3. Aerosols
   The alternatives include hydrocarbons such as propane, butane and isobutane, HCFCs, HFCs, Dimethyl, Ether and perfluorolethers. Other ozone friendly, CFC-free products are manual pump sprayers and dry powder inhalers.
4. Sterilants

The zero ODP alternatives include 100% ethylene oxide, ethylene oxide/carbon-dioxide mixtures, sterilization and formaldehyde. Some sterilants use HCFCs.

5. Carbon tetrachloride as solvent

Carbon tetrachloride has been used as solvent in developing countries but there are now many options available as alternatives. These include organic solvents such as alcohols, ketones and esters, and chlorinated solvents such as per-chloroethylene. Each of these alternatives has its own advantages and disadvantages.

6. Fire-fighting Sector

The choice of fire fighting systems depends on the circumstances. Halons are considered necessary only in a few critical cases such as fire-fighting systems for control rooms, aircraft, etc. Alternative fire fighting equipment contains carbon dioxide or dry powder. Apart from gaseous alternatives to halons new systems such as water mist technologies and combustion generated aerosols are developed as alternatives to halons fire fighting equipment. The halons are now available in vast quantities in equipment which is located in none critical circles. This halon can be banked for use in critical areas. The production and consumption of halons can be phased out completely through the use of such banks of halons.

7. Solvents Sector

Alternatives for CFC-113 and Methyl chloroform
No-clean technologies, aqueous and semi-aqueous cleaning,
Hydrocarbons, non-ozone depleting chlorinated solvents, HCFCs,
Perfluorocarbons and non-solvent cleaning processes.

8. Methyl Bromide

Alternatives for soil fumigation include processes such as solarisation, steam, Biological control, crop rotation, soilless culture etc. and chemicals such as chloropicrin, Metham sodium, Dazomet etc.