



Technical Circular

No.: 018/2019

Date: 6th May 2019

Subject – Phasing Out of Hydrochlorofluorocarbons (HCFCs) - An Ozone Depleting Substance (ODS).

- The regulation 12 of MARPOL Annex VI prohibits installation of equipment containing ODS, including hydrochlorofluorocarbons (HCFCs) on ships constructed on or after 1st January 2020.
- This is in line with the requirements of an international agreement on substances that deplete the ozone Layer, called the Montreal Protocol 1987. The Montreal Protocol was designed to stop the production and import of ozone depleting substances and reduce their concentration in the atmosphere to help protect the earth's ozone layer.
- The Montreal Protocol, with its amendments has set phase out timetable for all the major ozone depleting substances, including chlorofluorocarbons (CFCs), halons, HCFCs and other ODS. The worldwide phase out timetable across the sectors for HCFCs is as follow:

Ozone depleting substances	Developed countries	Developing countries
HCFCs	35% reduction by 2004 75% reduction by 2010 90% reduction by 2015 Total phase out by 2020	10% reduction by 2015 35% reduction by 2020 67.5% reduction by 2025 Total phase out by 2030

The phase out target for maritime sector i.e for ships as per regulation 12 of MARPOL Annex VI is set as 1st January 2020.

- The application of HCFCs, either as a single component or in blend on board ship is generally found in;
 - refrigeration and air conditioning equipment;
 - heat pumps;
 - foam applications e.g. extruded polystyrene foams, as a blowing agent in rigid polyurethane foams (used largely for insulation purposes);
 - solvent applications for purposes such as lubricants, coatings and cleaning fluids for electrical, electronic or photographic equipment (e.g. precision inertial guidance systems, and oxygen components and piping systems in aircraft carriers and hospital ships); and
 - portable fire extinguishers in applications such as used in telecommunication facilities, computer rooms, commercial shipping, pleasure craft etc.
- New installations containing HCFCs is prohibited on ships constructed on or after 1st January 2020. However systems and equipment containing HCFCs on existing ships are permitted to continue in service and may be recharged as necessary with prohibition of the deliberate discharge of ODS to the atmosphere.

- The phasing out of HCFCs will affect existing systems and equipment servicing and maintenance after 1st January 2020. Procurement of any small quantity of HCFCs for replenishment purpose may become a big challenge. Some of the challenges may be inflated prices, global sourcing efforts, increased breakdown time, legal and logistic issues, longer port stay etc. It is worth noting that few countries may enforce complete ban on servicing and maintenance of existing systems and equipment containing HCFCs within their jurisdiction.
- Ships having onboard installations of existing systems and equipment containing HCFCs are likely to have detailed inspections by the port state control (PSC) authorities. The records related to usage, servicing, maintenance, HCFCs consumption will be verified strictly towards compliance.
- In order to avoid future troubles arising out of such situations, owners and operators of the ships are advised to take stock of existing systems and equipment containing HCFCs installed on their respective ships. A suitable evaluation of existing systems and equipment with possible alternative arrangements may be carried out and a conscious decision of continuation with the existing systems and equipment or appropriate replacement/modification using non-ODS substances shall be taken.
- The ship owners and operators who would like to continue with the existing systems and equipment must ensure that at the time of servicing or decommissioning the systems or equipment containing HCFCs, the HCFC is duly collected in a controlled manner and, if not to be reused onboard, be landed to appropriate reception facilities for banking or destruction. Any redundant equipment or material containing HCFC is landed ashore for appropriate decommissioning or disposal. The latter also applies during ship recycling.
- Ship owners/ operators and masters are advised to be guided by above.

Enclosure:

1. NIL

Whilst the utmost care has been taken in the compilation of the Technical Information, neither Indian Register of Shipping, its affiliates and subsidiaries if any, nor any of its directors, officers, employees or agents assume any responsibility and shall not be liable to any person for any loss, damage or expense caused in any manner whatsoever by reliance on the information in this document.