

Safety Data Sheet

Product : ISCEON® MO59 (R417A)

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MSDS Nr : 300-25-2002BOC(A)

Version : 1.01

Date : 17/10/2006

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name ISCEON® MO59 (R417A)
Company identification see heading and/or footer
Emergency phone numbers see heading and/or footer

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation Preparation
Components/Impurities Contains the following components: 50% w/w 1,1,1,2-Tetrafluoroethane (R134a) {EINECS No. 212-377-0}/46.6% w/w Pentafluoroethane (R125) {EINECS No. 206-557-8}/3.4% w/w Butane n-(R600) {F+;R12} {EINECS No. 203-448-7}
EC Nr (from EINECS) Not applicable for preparations

3 HAZARDS IDENTIFICATION

Hazards identification In high concentrations may cause asphyxiation.
Liquefied gas

4 FIRST AID MEASURES

Inhalation In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Skin/eye contact In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing.
Immediately flush eyes thoroughly with water for at least 15 minutes.
Obtain medical assistance
Ingestion Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards Exposure to fire may cause containers to rupture/explode.
Non flammable
Hazardous combustion products If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition:
Hydrogen fluoride

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	Carbon monoxide
	Carbonyl fluoride
Suitable extinguishing media	All known extinguishants can be used.
Specific methods	If possible, stop flow of product. Move away from the container and cool with water from a protected position.
Special protective equipment for fire fighters	Use self-contained breathing apparatus and chemically protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.
Environmental precautions	Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Clean up methods	Ventilate area.

7 HANDLING AND STORAGE

Handling and storage	Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to supplier's container handling instructions. Keep container below 50°C in a well ventilated place.
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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country	UK: 1,1,1,2-Tetrafluoroethane (R134a) - LTEL: 1000ppm (EH40/2005) UK: Pentafluoroethane (R125) - LTEL: 1000ppm UK: Butane n- - LTEL: 600ppm; STEL: 750ppm (EH40/2005)
Personal protection	Ensure adequate ventilation. Do not smoke while handling product. Protect eyes, face and skin from liquid splashes.

9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	106.6
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Boiling point	-41.8 °C
Critical temperature	90.5 °C
Relative density, gas	3.7 (air=1)
Relative density, liquid	0.85 (water=1)
Vapour Pressure 20°C	8.6 bar
Solubility mg/l water	No reliable data available.
Appearance/Colour	Colourless liquid
Odour	Ethereal Poor warning properties at low concentrations.
Other data	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity

Stable under normal conditions.

Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.

Incompatible materials:-

Alkali metals.

May react with aluminium.

11 TOXICOLOGICAL INFORMATION

General

1,1,1,2-Tetrafluoroethane (R134a) - May produce irregular heart beat and nervous symptoms.

Pentafluoroethane (R125) - May produce irregular heart beat and nervous symptoms.

Butane n- - In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.

12 ECOLOGICAL INFORMATION

General

When discharged in large quantities may contribute to the greenhouse effect.

Global warming factor

1,1,1,2-Tetrafluoroethane (R134a) - 1300 (CO2=1)

Pentafluoroethane (R125) - 3200 (CO2=1)

Butane n- - 3 (CO2=1)

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13 DISPOSAL CONSIDERATIONS

General Avoid discharge to atmosphere.
Do not discharge into any place where its accumulation could be dangerous.
Contact supplier if guidance is required.

14 TRANSPORT INFORMATION

Proper shipping name LIQUEFIED GAS, N.O.S. (1,1,1,2-Tetrafluoroethane [R134a], Pentafluoroethane [R125])
UN Nr 3163
Class 2
ADR/RID Classification code 2A
ADR/RID Hazard Nr 20
Packing group None
Labelling ADR Label 2.2: non flammable non toxic gas
IMDG EmS codes F-C, S-V
IMDG Marine pollutant No
IATA passenger packing instruction 200
IATA passenger max. quantity/pack 75kg
IATA cargo packing instruction 200
IATA cargo max. quantity/pack 150kg
Other transport information Avoid transport on vehicles where the load space is not separated from the driver's compartment.
Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency.
Before transporting product containers ensure that they are firmly secured and:
- cylinder valve is closed and not leaking
- valve outlet cap nut or plug (where provided) is correctly fitted
- valve protection device (where provided) is correctly fitted
- there is adequate ventilation.
- compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548 Not applicable for preparations
EC Classification Not classified as dangerous preparation.
EC Labelling (Symbols, R&S phrases) No EC labelling required.

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Labelling of cylinders

-Symbols

Label 2.2: non flammable non toxic gas

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Asphyxiant in high concentrations.

Keep container in well ventilated place.

Do not breathe the gas.

The hazard of asphyxiation is often overlooked and must be stressed during operator training.

Contact with liquid may cause cold burns/frost bite.

Users of breathing apparatus must be trained.

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.

Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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