

**DuPont™ ISCEON® MO79 (R-422A) refrigerant**

Version 2.0

Revision Date 2008/06/12

Ref. 130000027388

This SDS adheres to the standards and regulatory requirements of New Zealand and may not meet the regulatory requirements in other countries.

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name : DuPont™ ISCEON® MO79 (R-422A) refrigerant

Recommended use of the chemical and restrictions on use

Recommended use : Refrigerant

Supplier : DuPont (New Zealand) Limited
Street address : 98 Kerrs Road, Wiri, Manukau City, Auckland
New Zealand
Telephone : (64)-9268-5500
Telefax : (64)-9268-5490
Emergency telephone : NZ Poisons Information Centre Ph: 0800 764766

Issuing date : 2008/07/01

2. HAZARDS IDENTIFICATION

Not classified as hazardous according to criteria in the HS (Minimum Degrees of Hazard) Regulations 2001
Classified as a Dangerous Good according to NZS 5433

HSNO Classification:

Not applicable to classification standard.

Other hazards which do not result in classification

Rapid evaporation of the liquid may cause frostbite.
Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance/preparation : Preparation

Components

Chemical Name	CAS-No.	Concentration
1,1,1,2-Tetrafluoroethane	811-97-2	11.5 %
Pentafluoroethane	354-33-6	85.1 %
Isobutane (<0.1% butadiene)	75-28-5	3.4 %

4. FIRST AID MEASURES

If unconscious, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist, call a physician.

Eye contact : Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

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- Skin contact : Wash off with warm water. Take off all contaminated clothing immediately.
- Inhalation : Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary.
- Ingestion : No information available.
- Most important symptoms : No information available.
- Notes to physician : Do not give adrenaline or similar drugs.

5. FIRE-FIGHTING MEASURES

- Specific hazards : pressure build-up
- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.
- Suitable extinguishing media : No information available.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.
- Hazchem Code : 2RE

6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas. Ventilate the area. Refer to protective measures listed in sections 7 and 8.
- Environmental precautions : Should not be released into the environment.
- Methods and materials for containment and cleaning up : Evaporates.

7. HANDLING AND STORAGE**Handling**

- Technical measures/Precautions : Provide sufficient air exchange and/or exhaust in work rooms. For personal protection see section 8.
- Precautions for safe handling : No special protective measures against fire required.

Storage


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Suitable storage conditions : Keep container tightly closed in a dry and well-ventilated place. Store in original container.

Storage temperature: < 52 °C
Keep at temperature not exceeding 52°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION
Occupational Exposure Limits

Chemical Name			
1,1,1,2-Tetrafluoroethane	TWA	1,000 ppm	New Zealand. OELs. (Workplace Exposure Standards) (2002)

Engineering measures : Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Hand protection : Heat insulating gloves

Eye protection : Safety glasses

Skin and body protection : No information available.

Respiratory protection : Half mask with a particle filter conforming to AS1715 & AS1716.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES
Appearance

Physical state : gaseous

Form : Liquefied gas

Colour : colourless

Odour : slight ether-like

Odour Threshold : no data available

pH : neutral

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Melting/freezing point

no data available

Boiling point/boiling range

Boiling point/boiling range : -46.2 - -41.5 °C (1,013 hPa)

Flash point : does not flash**Evaporation rate** : no data available**Flammability (solid, gas)** : no data available**Explosive properties**

Upper explosion limit : not applicable

Lower explosion limit : no data available

Vapour pressure : 12,200 hPa (25 °C)**Vapour density** : no data available**Relative density** : no data available**Solubility**

Water solubility : slightly soluble

Solubility in other solvents : no data available

Partition coefficient: : no data available**n-octanol/water****Autoignition temperature** : no data available**Decomposition temperature** : no data available**Viscosity** : no data available**Other data** : Density: 1.157 g/cm³ (25 °C) (as liquid)**10. STABILITY AND REACTIVITY**

Stability : No information available.

Conditions to avoid : The product is not flammable in air under ambient conditions of temperature and pressure. When pressurised with air or oxygen the mixture may become flammable. Certain mixtures of HCFCs or HFCs with chlorine may become flammable or reactive under certain conditions.

Materials to avoid : No information available.


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Hazardous decomposition products : Hydrogen halides, Carbon dioxide (CO₂), Carbon monoxide, Fluorocarbons, Carbonyl halides

Possibility of hazardous reactions : No information available.

11. TOXICOLOGICAL INFORMATION

Acute toxicity : 1,1,1,2-Tetrafluoroethane:

Inhalation: ALC/4 h/rat : 567000 ppm

LC50/4 h/rat : 358500 ppm

dog :

Cardiac sensitization

Pentafluoroethane:

Inhalation: LC50/4 h/mouse : 556329 ppm

Isobutane (<0.1% butadiene):

Inhalation: LC50/4 h/rat : 276808 ppm

The toxicological data has been taken from products of similar composition.

Skin corrosion/irritation : 1,1,1,2-Tetrafluoroethane:

non-irritant

Serious eye damage/eye irritation : 1,1,1,2-Tetrafluoroethane:

non-irritant

Respiratory sensitization / Skin sensitization : 1,1,1,2-Tetrafluoroethane:

Not a skin sensitizer.

Mutagenicity : 1,1,1,2-Tetrafluoroethane:

Tests on bacterial or mammalian cell cultures did not show mutagenic effects. Animal testing did not show any mutagenic effects.

Pentafluoroethane:

Did not cause genetic damage in cultured bacterial cells.

Isobutane (<0.1% butadiene):

Did not cause genetic damage in cultured bacterial cells.


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- Carcinogenicity : DuPont™ ISCEON® MO79 (R-422A) refrigerant:
Did not show carcinogenic effects in animal experiments.
- Toxicity to reproduction : DuPont™ ISCEON® MO79 (R-422A) refrigerant:
Did not show mutagenic or teratogenic effects in animal experiments.
- Target Organs : no data available
- Aspiration toxicity : no data available
- Other : DuPont™ ISCEON® MO79 (R-422A) refrigerant:
Rapid evaporation of the liquid may cause frostbite.
1,1,1,2-Tetrafluoroethane:
Repeated dose toxicity: Inhalation, rat
No toxicologically significant effects were found.
Pentafluoroethane:
Repeated dose toxicity: Inhalation, rat
No toxicologically significant effects were found.

12. ECOLOGICAL INFORMATION
Ecotoxicity effects

- Toxicity to fish : 1,1,1,2-Tetrafluoroethane:
LC50/96 h/Oncorhynchus mykiss (rainbow trout): 450 mg/l
Isobutane (<0.1% butadiene):
This product has no known eco-toxicological effects.
- Other : 1,1,1,2-Tetrafluoroethane:
EC50/48 h/Daphnia magna (Water flea): 980 mg/l
- Persistence and degradability : no data available
- Bioaccumulation : no data available
- Mobility in soil : no data available
- Other adverse effects : no data available

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13. DISPOSAL CONSIDERATIONS

- Waste disposal methods : Can be used after re-conditioning.
- Contaminated packaging : Empty pressure vessels should be returned to the supplier. Disposable containers: Dispose of in accordance with local regulations.

14. TRANSPORT INFORMATION**NZS 5433**

- UN-Number : 1078
- Proper shipping name : Refrigerant gas, n.o.s.
(1,1,1,2-Tetrafluoroethane, Pentafluoroethane)
- Class : 2.2
- Hazchem Code : not applicable

IMDG

- UN-Number : 1078
- Proper shipping name : Refrigerant gas, n.o.s.
(1,1,1,2-Tetrafluoroethane, Pentafluoroethane)
- Class : 2.2
- Marine pollutant : no

IATA_C

- UN-Number : 1078
- Proper shipping name : Refrigerant gas, n.o.s.
(1,1,1,2-Tetrafluoroethane, Pentafluoroethane)
- Class : 2.2

- Matters needing attention for transportation : Classified as a Dangerous Good according to NZS 5433

15. REGULATORY INFORMATION**National regulatory information**

- HSNO Standard Number : Exempt

Regulations in other countries

The product does not need to be labelled in accordance with EC directives or respective national laws.

16. OTHER INFORMATION

- Sources of key data used to compile the Safety Data Sheet : US MSDS No.: 6208FR
- Issuing date : 2008/07/01



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Significant change from previous version is denoted with a double bar.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.