FREON R22

Version 2.1
Revision Date 01.11.2004 Ref. 150000001175

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

Product information

Trade name	:	FREON R22
Use of the Substance/Preparation	:	refrigerant
Company	:	Du Pont (Australia) Ltd 168 Walker Street North Sydney NSW 2060 Australia
Telephone	:	(02) 9923 6111
Telefax	:	(02) 9923 6011
Emergency telephone number	:	(02) 9963 1301

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Chlorodifluoromethane

Components

Chemical Name	CAS-No.	Concentration
Chlorodifluoromethane (R22)	75-45-6	>99.5%

3. HAZARDS IDENTIFICATION

Hazardous classification
Classified as dangerous goods according to the ADG Code
Not classified as hazardous according to criteria of NOHSC.

Risks
Dangerous for the ozone layer.

Safety data
Refer to manufacturer/supplier for information on recovery/recycling.

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

4. FIRST AID MEASURES

General advice	:	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.
Inhalation	:	Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary.

Skin contact	:	Wash off with warm water. Take off all contaminated clothing immediately.
Eye contact	:	Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

Notes to physician

Treatment	:	Do not give adrenaline or similar drugs.

5. FIRE-FIGHTING MEASURES

Specific hazards during fire fighting	:	pressure build-up
Special protective equipment for fire-fighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Cool containers / tanks with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	:	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 for cleaning up	:	Evaporates.

7. HANDLING AND STORAGE

Handling

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

Storage

Requirements for storage areas and containers	:	Keep container tightly closed in a dry and well-ventilated place. Store in original container.
Advice on common storage	:	No materials to be especially mentioned.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	Values	Control parameters	Basis

Chlorodifluoromethane (R22)	TWA	3,540 mg/m3 (1,000 ppm)	NOHSC:1003 (2003)

Engineering measures

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Respiratory protection	:	For rescue and maintenance work in storage tanks use self-contained breathing apparatus. Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.
Hand protection	:	heat insulating gloves
Eye protection	:	safety glasses
Hygiene measures	:	Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form	:	liquefied gas
Colour	:	colourless
Odour	:	ether-like
pH	:	neutral
Melting point/range	:	-160.0 °C at 1,013 hPa
Boiling point/range	:	-40.8 °C at 1,013 hPa
Flash point	:	not applicable
Ignition temperature	:	632 °C
Lower explosion limit	:	, not applicable
Vapour pressure	:	7,228 hPa at 12 °C
Vapour pressure	:	10,450 hPa at 25 °C
Vapour pressure	:	19,423 hPa at 50 °C
Density	:	1.210 g/cm3 at 20 °C, (as liquid)
Density	:	1.194 g/cm3 at 25 °C, (as liquid)
Density	:	0.0047 g/cm3 at -40.72 °C (1,013 hPa)
Density	:	0.0036 g/cm3 at ca. 21 °C (1,013 hPa)

Density	:	0.0035 g/cm3 at 25 °C (1,013 hPa)
Water solubility	:	2.93 g/l at 25 °C at 1,013 hPa
Water solubility	:	4.22 g/l at 12 °C at 1,013 hPa
Partition coefficient (n-octanol/water)	:	log Pow: 1.13
Relative vapour density	:	3.03 at 25 °C

10. STABILITY AND REACTIVITY

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	:	alkali metals, alkaline earth metals, powdered metals, powdered metal salts
Hazardous decomposition products	:	hydrogen halides, carbon dioxide (CO2), Carbon monoxide, fluorocarbons, carbonyl halides
Hazardous reactions	:	Stable

11. TOXICOLOGICAL INFORMATION

Acute inhalation toxicity

• Chlorodifluoromethane (R22)	:	LC50/4 h/rat : 778 mg/l
		LC50/0.25 h/rat : 1,237 mg/l
		LC50/0.5 h/mouse : 990 mg/l

Sensitization

• Chlorodifluoromethane (R22)	:	Did not cause sensitization on laboratory animals.
Human experience	:	Excessive exposures may affect human health, as follows:
		Inhalation:severe shortness of breath, narcosis, Irregular cardiac activity

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability	:	According to the results of tests of biodegradability this product is not readily biodegradable.

Toxicity to fish
• Chlorodifluoromethane (R22) : LC50/96 h/Zebra fish: 777 mg/l
Analytical monitoring: yes

Aquatic toxicity
• Chlorodifluoromethane (R22) : EC50/48 h/Daphnia: 433 mg/l

Further information on ecology

Global warming potential (CO2 = 1) : 1700

Additional ecological information : Dangerous for the ozone layer.

13. DISPOSAL CONSIDERATIONS

Product : Can be used after re-conditioning.

Contaminated packaging : Empty pressure vessels should be returned to the supplier.

14. TRANSPORT INFORMATION

ADG

UN-No 1018
Description of the goods : Chlorodifluoromethane
Class : 2.2
Hazchem Code : 2RE

IMDG

Substance No. : 1018
Description of the goods : Chlorodifluoromethane
Class : 2.2
ADR/RID-Labels : 2.2
Marine pollutant : no

Further Information : Classified as dangerous goods according to the ADG Code

15. REGULATORY INFORMATION

Labelling

Symbol(s) : N Dangerous for the environment

R-phrase(s) : R59 Dangerous for the ozone layer.

S-phrase(s)	:	S59	Refer to manufacturer/supplier for information on recovery/recycling.

National regulatory information:

SUSDP	:	No poison schedule number allocated

16. OTHER INFORMATION

Sources of key data used to compile the datasheet:

1. National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003)]
2. Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(1999)]
3. List of Designated Hazardous Substances [NOHSC:10005(1999)]
4. Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]
5. Australian Dangerous Goods Code, No. 6 [National Road Transport Commission]
6. Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP), No. 18 [NDPSC:May 2003]
7. National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]

Department:

Du Pont (Australia) Ltd
168 Walker Street
North Sydney NSW 2060
Australia

Further information:

Before use read DuPont's safety information., For further information contact the local DuPont office or DuPont's nominated distributors., ® DuPont's registered trademark

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