

# SAFETY DATA SHEET



## DuPont™ FREON® 22

Version 2.3

Revision Date 04.06.2008

Ref. 130000024323

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

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

#### Product information

Trade name : DuPont™ FREON® 22  
Use of the : Refrigerant  
Substance/Preparation :  
Company : Du Pont (Australia) Ltd  
7 Eden Park Drive  
Macquarie Park NSW 2113  
Australia  
  
Telephone : (02) 9923 6111  
Telefax : (02) 9923 6011  
Emergency telephone : (02) 9923 6275 (Transport Emergency)  
(24 hr Emergency Medical Information: 1800 674 415)

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : R-22

#### 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


**DuPont™ FREON® 22**

Version 2.3

Revision Date 04.06.2008

Ref. 130000024323

- 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.
- Further information on storage conditions : Keep at temperature not exceeding 52°C.
- Advice on common storage : No materials to be especially mentioned.
- Storage temperature : < 52 °C


**DuPont™ FREON® 22**

Version 2.3

Revision Date 04.06.2008

Ref. 130000024323

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Components with workplace control parameters**

Components	Values	Control parameters	Basis
Chlorodifluoromethane (R22)	TWA	3,540 mg/m <sup>3</sup> (1,000 ppm)	AU OEL (2004)

**Engineering measures**

Ensure adequate ventilation, especially in confined areas.

**Personal protective equipment**

- Respiratory protection : Half mask with a particle filter conforming to AS1715 & AS1716.
- 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/boiling 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 10,450 hPa at 25 °C 19,423 hPa at 50 °C
Density	: 1.210 g/cm <sup>3</sup> at 20 °C (as liquid) 1.194 g/cm <sup>3</sup> at 25 °C (as liquid)


**DuPont™ FREON® 22**

Version 2.3

Revision Date 04.06.2008

Ref. 130000024323

	0.0047 g/cm <sup>3</sup> at -40.72 °C (1,013 hPa)
	0.0036 g/cm <sup>3</sup> at ca. 21 °C (1,013 hPa)
	0.0035 g/cm <sup>3</sup> at 25 °C (1,013 hPa)
Water solubility	: 2.93 g/l at 25 °C at 1,013 hPa
	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 (CO <sub>2</sub> ), Carbon monoxide, Fluorocarbons, Carbonyl halides
Hazardous reactions	: Stable

**11. TOXICOLOGICAL INFORMATION**

Acute inhalation toxicity	
• Chlorodifluoromethane (R22)	: LC50/4 h/rat : 778 mg/l
	Central nervous system depression Hypoactivity Altered respiratory rate Cardiac sensitization
Skin irritation	
• Chlorodifluoromethane (R22)	: irritant
Eye irritation	
• Chlorodifluoromethane (R22)	: irritant

# SAFETY DATA SHEET



## DuPont™ FREON® 22

Version 2.3

Revision Date 04.06.2008

Ref. 130000024323

### Sensitisation

- Chlorodifluoromethane (R22) : Did not cause sensitization on laboratory animals.

### Repeated dose toxicity

- Chlorodifluoromethane (R22) : Inhalation  
Reduced body weight gain Organ weight changes

### 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 (GWP) : 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.

Disposable containers: Dispose of in accordance with local regulations.

## 14. TRANSPORT INFORMATION

ADG

## SAFETY DATA SHEET

**DuPont™ FREON® 22**

Version 2.3

Revision Date 04.06.2008

Ref. 130000024323

UN-Number : 1018  
Proper shipping name : Chlorodifluoromethane  
Class : 2.2  
Hazchem Code : 2RE

**IMDG**

UN-Number : 1018  
Proper shipping name : Chlorodifluoromethane  
Class : 2.2  
Labelling No. : 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.  
Further information : Not classified as hazardous according to criteria of NOHSC.

**National regulatory information**

SUSDP : No poison schedule number allocated

**16. OTHER INFORMATION****Sources of key data used to compile the Safety Data Sheet:**

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. 19 [NDPSC: 2004]
7. National Code of Practice for the Labelling of Workplace Substances [NOHSC:2012(1994)]

**Department:**

Du Pont (Australia) Ltd  
7 Eden Park Drive  
Macquarie Park NSW 2113  
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

**DuPont™ FREON® 22**

Version 2.3

Revision Date 04.06.2008

Ref. 130000024323

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.