DuPont™ SUVA® MP66 Refrigerant

Version 2.4
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This SDS adheres to the standards and regulatory requirements of Great Britain and may not meet the regulatory requirements in other countries.

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

Product information

Product name	:	DuPont™ SUVA® MP66 Refrigerant
Types	:	ASHRAE Refrigerant number designation: R-401B
Use of the Substance/Preparation	:	refrigerant
Company	:	Du Pont de Nemours (Nederland) B.V. Baanhoekweg 22 NL-3313 LA Dordrecht The Netherlands
Telephone	:	+31-78-630.1011
Telefax	:	+31-78-630.1181
Emergency telephone number	:	+44-(0)8456-006.640

2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No.	EC-No.	Classification	Concentration [%]
Chlorodifluoromethane (R22)	75-45-6	200-871-9	N; R59	61
1,1-Difluoroethane (R152a)	75-37-6	200-866-1	F+; R12	11
1-Chloro-1,2,2,2-tetrafluoroethane (R124)	2837-89-0	220-629-6	N; R59	28

For the full text of the R phrases mentioned in this Section, see Section 16.

3. HAZARDS IDENTIFICATION

Dangerous for the ozone layer.
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.
German storage class	:	2A : Compressed, liquefied or pressurised gas

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Type	Control	Update	Basis

		Form of exposure	parameters		
Chlorodifluoromethane (R22)	75-45-6	TWA	3 590 mg/m3 1 000 ppm	2001	EH40 OES
		TWA	3 600 mg/m3 1 000 ppm	05 2001	EU ELV

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 : slight, ether-like,

pH : neutral

Boiling point/range : -34,7 °C at 1 013 hPa

Flash point : does not flash

Ignition temperature : 685 °C

Vapour pressure : 6 890 hPa at 25 °C

Density : 1,186 g/cm3 at 25 °C, (as liquid)

Water solubility : 1 g/l at 25 °C

Relative vapour density : 3,2 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

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
• 1,1-Difluoroethane (R152a)	:	LC50/ 2 h/ rat : > 539,5 mg/l
		LC50/ 2 h/ mouse : 960 mg/l
• 1-Chloro-1,2,2,2-tetrafluoroethane (R124)	:	LC50/ 4 h/ rat : 1 284 mg/l

Sensitization

• Chlorodifluoromethane (R22)	:	Did not cause sensitization on laboratory animals.
Carcinogenicity assessment	:	Did not show carcinogenic effects in animal experiments.
Toxicity to reproduction assessment	:	Did not show mutagenic or teratogenic effects in animal experiments.
Human experience	:	Excessive exposures may affect human health, as follows:
		Inhalation severe shortness of breath, narcosis, Irregular cardiac activity
Further information	:	Rapid evaporation of the liquid may cause frostbite.

12. ECOLOGICAL INFORMATION

Toxicity to fish

• Chlorodifluoromethane (R22)	:	static test LC50 / 96 h/ Zebra fish : 777 mg/l

Aquatic toxicity

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

Global warming potential (GWP)	:	1 200

13. DISPOSAL CONSIDERATIONS

Product	:	Can be used after re-conditioning.
Contaminated packaging	:	Empty pressure vessels should be returned to the supplier.

14. TRANSPORT INFORMATION

ADR

Class:	2
Classification Code:	2A
HI No::	20
UN-No:	1078
Labelling No.:	2.2
Proper shipping name:	Refrigerant gas, n.o.s. (Chlorodifluoromethane, Chlorotetrafluoroethane)

IATA_C

Class:	2.2
UN-No:	1078
Labelling No.:	2.2
Proper shipping name:	Refrigerant gas, n.o.s. (Chlorodifluoromethane, Chlorotetrafluoroethane)

IMDG

Class:	2.2
UN-No:	1078
Labelling No.:	2.2
Proper shipping name:	Refrigerant gas, n.o.s. (Chlorodifluoromethane, Chlorotetrafluoroethane)

15. REGULATORY INFORMATION

Labelling according to EC Directives

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.

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2

R12	Extremely flammable.
R59	Dangerous for the ozone layer.

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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