

**SUVA ® MP39 Refrigerant**

Version 1

Revision Date 24.09.2002

Ref. 13000000375

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

## Product information

Product name : SUVA ® MP39 Refrigerant

Types : ASHRAE Refrigerant number designation: R-401A

Use of the Substance/Preparation :

Company : DuPont de Nemours (Nederland) B.V.  
Dordrecht Works  
Baanhoekweg 22  
3313 LA Dordrecht

Telephone : +317863015676301011

Telefax :

Emergency telephone number : +44-(0)2871-861.313

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature of the preparation	Weight %	CAS-No	EC-No.
Chlorodifluoromethane \ (R22\)	53	75-45-6	200-871-9
1,1-Difluoroethane \ (R152a\)	13	75-37-6	200-866-1
1-Chloro-1,2,2,2-tetrafluoroethane \ (R124\)	34	2837-89-0	220-629-6

## 3. HAZARDS IDENTIFICATION

Most important hazards: Vapours are heavier than air and can cause suffocation by reducing oxygen available for breathing.

Specific hazards: Rapid evaporation of the liquid may cause frostbite.  
May cause cardiac arrhythmia.

## 4. FIRST AID MEASURES:

General advice: Never give anything by mouth to an unconscious person.

Inhalation: Move to fresh air. Oxygen or artificial respiration if needed. Do not give adrenaline or similar drugs.

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact: Wash off immediately with plenty of water. Take off all contaminated clothing immediately.

## 5. FIRE-FIGHTING MEASURES:

Suitable extinguishing media: any

Specific hazards: pressure build-up

Specific methods: Cool containers / tanks with spray water.

## 6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate personnel to safe areas. Ensure adequate ventilation. wear personal protective equipment

Environmental precautions: Evaporates.

Methods for cleaning up: Evaporates.

\* DuPont's registered trademark

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## 7. HANDLING AND STORAGE:

Handling: Technical measures/Precautions: Provide sufficient air exchange and/or exhaust in work rooms.  
Safe handling advice: Use only in well-ventilated areas. Do not breathe vapours or spray mist.

Storage: Technical measures/Storage conditions: Keep tightly closed in a dry, cool and well-ventilated place.  
Incompatible products: explosive, flammable materials, Organic peroxide  
Packaging material: Store in original container.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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

Control parameters: Chlorodifluoromethane \ (R22\): OES: \ (8h-TWA\ ) = 1000 ppm = 3590 mg/m<sup>3</sup>; \ (EH40/99\ )  
1,1-Difluoroethane \ (R152a\): DuPont's acceptable exposure limit AEL \ (8-h TWA\ ) = 1000 ml/m<sup>3</sup>; DuPont \ (1999\ )  
Chlorotetrafluoroethane: DuPont's acceptable exposure limit, AEL = 1000 ppm; 8 & 12h TWA; \ (1995\ ) .

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.  
Eye protection: safety glasses  
Hand protection: rubber gloves  
Hygiene measures: Do not smoke.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Tested according to

Form:		liquefied gas
Colour:		colourless
Odour:		ether-like
pH: \ ( °C\ )	\ (at g/l H <sub>2</sub> O\ )	neutral
Boiling point/range:	\ (1 bar\ )	-33,0 °C
Flash point:		does not flash
Explosive properties:		no data available
Vapour pressure:	\ ( 25 °C\ )	772,9 kPa
	\ ( 50 °C\ )	1462,8 kPa
Relative density:	\ ( 25 °C\ )	1,188 kg/l \ (liquid\ )
Solubility:		
Water solubility	\ ( 25 °C\ )	0,24 % wt

## 10. STABILITY AND REACTIVITY:

Stability: No decomposition if used as directed.

Materials to avoid: alkali metals, alkaline earth metals, powdered metal salts, powdered Al, Zn, Be, etc,

Hazardous decomposition products: hydrogen halides, traces of carbonyl halides,

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.

## 11. TOXICOLOGICAL INFORMATION

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## Acute toxicity:

Chlorodifluoromethane \ (R22\): LC50/inhalation/4h/rat = 220 ml/1  
 1,1-Difluoroethane \ (R152a\): LC50/inhalation/2h/rat = >200 ml/1  
 Chlorotetrafluoroethane: ALC/inhalation/4h/rat = 1284 mg/1

Local effects: Concentrations substantially above the OEL value may cause narcotic effects. Inhalation of decomposition products in high concentration may cause shortness of breath \ (lung oedema\).

Long term toxicity: Did not show carcinogenic, teratogenic or mutagenic effects in animal experiments.

Specific effects: Rapid evaporation of the liquid may cause frostbite. May cause cardiac arrhythmia.

## 12. ECOLOGICAL INFORMATION

## Ecotoxicity effects:

Chlorodifluoromethane \ (R22\): Halocarbon global warming potential; HGWP; \ (R-11 = 1\ ) = 0,098  
 Ozone depletion potential; ODP; \ (R-11 = 1\ ) = 0,05  
 Dangerous for the ozone layer.

Difluoroethane \ (R152a\): Halocarbon global warming potential; HGWP; \ (R-11 = 1\ ) = 0,03  
 Ozone depletion potential; ODP; \ (R-11 = 1\ ) = 0 \ (UNEP/WMO 1989\)

Chlorotetrafluoroethane: Halocarbon global warming potential; HGWP; \ (R-11 = 1\ ) = 0,1  
 Ozone depletion potential; ODP; \ (R-11 = 1\ ) = 0,02  
 Dangerous for the ozone layer.

## 13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Can be used after re-conditioning.

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

## 14. TRANSPORT INFORMATION

UN/ID No.: 3163

## ADR/RID

Class: 2 Subrisks: n.a. Hazard labels: 2  
 Packing group: n.a. TREM-CARD: 20G39-A HI/UN No: 20/3163  
 Proper shipping name: 3163 Liquefied gas, n.o.s., \ ( Chlorodifluoromethane ,  
 1-Chloro-1,2,2,2-tetrafluoroethane \ ), 2, ADR

## IMO

Class: 2.2 Subrisks: n.a. Hazard labels: 2  
 Packing group: n.a.  
 Proper shipping name: Liquefied gas, n.o.s. \ ( Chlorodifluoromethane ,  
 1-Chloro-1,2,2,2-tetrafluoroethane \ )

## ICAO

Class: 2.2 Subrisks: n.a. Hazard labels: 2  
 Packing group: n.a.  
 Proper shipping name: Liquefied gas, n.o.s. \ ( Chlorodifluoromethane ,  
 1-Chloro-1,2,2,2-tetrafluoroethane \ )

n.a. = not applicable

## 15. REGULATORY INFORMATION

The product does not need to be labelled in accordance with The Chemicals \ (Hazard Information and Packaging for Supply\ ) Regulations 1994.

## 16. OTHER INFORMATION

Recommended use: refrigerant



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Further information:

For further information contact the local DuPont office or DuPont's nominated distributors.

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