



# SAFETY DATA SHEET

**R-401B**

**Version : 1**

**Date : 13/01/2001**

This SDS adheres to the standards and regulatory requirements of the European Community and may not meet regulatory requirements of other countries. In accordance with the legislation of the European community

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

Product name: R-401B

Supplier: DEHON SERVICE  
26 avenue du petit parc  
94683 VINCENNES Cedex  
01 43 98 75 00

Emergency telephone number: ORFILA : 01 45 42 59 59

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature of the preparation:	Weight %	CAS-No	EC-No.
Chlorodifluoromethane (R22)	61	75-45-6	200-871-9
1,1-Difluoroethane (R152a)	11	75-37-6	200-866-1
1-Chloro-1,2,2,2-tetrafluoroethane (R124)	28	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. Use personal protective equipment.  
Environmental precautions: Evaporates.  
Methods for cleaning up: Evaporates.

## 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 vapour 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): TLV-TWA = 1000 ppm  
1,1-Difluoroethane (R152a): exposure limit AEL(8-h TWA) = 1000 ml/m<sup>3</sup>  
Chlorotetrafluoroethane: exposure limit, AEL = 1000 ppm; 8 & 12h TWA  
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) -34,7 °C  
Flash point: does not flash  
Explosive properties: no data available  
Vapour pressure: ( 25 °C) 689 kPa  
( °C) kPa  
Relative density: ( 25 °C) 1,186 kg/l (liquid)  
Solubility:  
- water solubility ( 25 °C) .1 % 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,

#### 11. TOXICOLOGICAL INFORMATION

Acute toxicity:  
Chlorodifluoromethane (R22): LC50/inhalation/4h/rat = 220 ml/l  
1,1-Difluoroethane (R152a): LC50/inhalation/2h/rat = >200 ml/l  
Chlorotetrafluoroethane: ALC/inhalation/4h/rat = 1284 mg/l  
Local effects: Concentrations substantially above the TLV 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-No: 1078

ADR/RID

Class: 2 Item: 2A ADR/RID-Labels: 2  
TREM-CARD: 20G39-A HI/UN No: 20/1078  
Proper shipping name: 1078 Liquefied gas, n.o.s. Chlorodifluoromethane, Chlorotetrafluoroethane, 2, 2A, ADR

ICAO

UN/ID No.: 1078 Class: 2.2 Subrisks: n.a.  
Packaging group: n.a. ICAO-Labels: Non-flammable gas  
Proper shipping name: Liquefied gas, n.o.s.  
(Chlorodifluoromethane, Chlorotetrafluoroethane)

IMO

Class: 2.2 IMDG Page: 2155 Subrisks: n.a.  
Packaging group: n.a. IMO-Labels: Non-flammable gas  
EmS: 2-09 MFAG: 620  
Proper shipping name: Liquefied gas, n.o.s.  
(chlorodifluoromethane, Chlorotetrafluoroethane)

n.a. = not applicable

#### **15. REGULATORY INFORMATION**

The product does not need to be labelled in accordance with EC-Directive 88/379

#### **16. OTHER INFORMATION**

Recommended use: refrigerant

Further information: For further information contact the local DEHON nominated distributors.

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 information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.