

Safety Data Sheet

Product : Dichlorodifluoromethane (R12)
MSDS Nr : 041_AL Version : 1.01

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Date : 31/07/2002

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

MSDS Nr 041_AL
Product name Dichlorodifluoromethane (R12)
Chemical formula CCl₂F₂
Company identification see heading and/or footer
see paragraph 16 "OTHER INFORMATION"
Emergency phone numbers see heading and/or footer
see paragraph 16 "OTHER INFORMATION"

2 COMPOSITION/INFORMATION ON INGREDIENTS

Substance/Preparation Substance.
Components/Impurities Contains no other components or impurities which will influence the classification of the product.
CAS Nr 00075-71-8
EEC Nr (from EINECS) 200-893-9

3 HAZARDS IDENTIFICATION

Hazards identification Liquefied gas
In high concentrations may cause asphyxiation.

4 FIRST AID MEASURES

Inhalation In high concentrations may cause asphyxiation. Symptoms may include loss of mobility/consciousness. Victim may not be aware of asphyxiation.
In low concentrations may cause narcotic effects. Symptoms may include dizziness, headache, nausea and loss of co-ordination.
Remove victim to uncontaminated area wearing self contained breathing apparatus. Keep victim warm and rested. Call a doctor. Apply artificial respiration if breathing stopped.
Skin/eye contact Immediately flush eyes thoroughly with water for at least 15 minutes.
In case of frostbite spray with water for at least 15 minutes. Apply a sterile dressing.
Obtain medical assistance
Ingestion Ingestion is not considered a potential route of exposure.

5 FIRE FIGHTING MEASURES

Specific hazards Exposure to fire may cause containers to rupture/explode.
Non flammable

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Hazardous combustion products	If involved in a fire the following toxic and/or corrosive fumes may be produced by thermal decomposition: Carbonyl fluoride Carbon monoxide Phosgene Hydrogen chloride Hydrogen fluoride
Suitable extinguishing media	All known extinguishants can be used.
Specific methods	If possible, stop flow of product. Move away from the container and cool with water from a protected position.
Special protective equipment for fire fighters	Use self-contained breathing apparatus and chemically protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Personal precautions	Evacuate area. Wear self-contained breathing apparatus when entering area unless atmosphere is proved to be safe. Ensure adequate air ventilation.
Environmental precautions	Try to stop release. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous.
Clean up methods	Ventilate area.

7 HANDLING AND STORAGE

Handling and storage	Suck back of water into the container must be prevented. Do not allow backfeed into the container. Use only properly specified equipment which is suitable for this product, its supply pressure and temperature. Contact your gas supplier if in doubt. Refer to supplier's container handling instructions. Keep container below 50°C in a well ventilated place.
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8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value -TLV(ACGIH)	1000 ppm (2000 edition)
Exposure limit value for country	Great Britain: STEL: 1250 ppm LTEL: 1000 ppm (EH 40/97) Germany: MAK= 1000 ppm
Personal protection	Ensure adequate ventilation. Do not smoke while handling product.

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9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	121
Melting point	-158 °C
Boiling point	-29.8 °C
Critical temperature	112 °C
Relative density, gas	4.2 (air=1)
Relative density, liquid	1.3 (water=1)
Vapour Pressure 20°C	5.7 bar
Solubility mg/l water	286 mg/l
Appearance/Colour	Colourless gas
Odour	Ethereal
	Poor warning properties at low concentrations.
Other data	Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

10 STABILITY AND REACTIVITY

Stability and reactivity	Stable under normal conditions. Thermal decomposition yields toxic products which can be corrosive in the presence of moisture.
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11 TOXICOLOGICAL INFORMATION

General	May produce irregular heart beat and nervous symptoms.
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12 ECOLOGICAL INFORMATION

General	May have damaging effect on ozone layer. Covered by the 'Montreal Protocol'.
Ozone depletion factor	1
Global warming factor	10600

13 DISPOSAL CONSIDERATIONS

General	Do not discharge into any place where its accumulation could be dangerous. Refer to supplier's waste gas recovery programme. Contact supplier if guidance is required.
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14 TRANSPORT INFORMATION

Proper shipping name	Dichlorodifluoromethane, (R12)
UN Nr	1028
Class/Div	2.2
ADR/RID Classification code	2, 2 ^o A
ADR/RID Hazard Nr	20
Labelling ADR	Label 2: non flammable non toxic gas
Other transport information	Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers ensure that they are firmly secured and: - cylinder valve is closed and not leaking - valve outlet cap nut or plug (where provided) is correctly fitted - valve protection device (where provided) is correctly fitted - there is adequate ventilation. - compliance with applicable regulations.

15 REGULATORY INFORMATION

Number in Annex I of Dir 67/548	Not included in Annex I.
EC Classification	Proposed by the industry N;R59
-Symbols	N: Dangerous for the environment
-Risk phrases	R59 Dangerous for the ozone layer.
-Safety phrases	S59 Refer to manufacturer/supplier for information on recovery/recycling

16 OTHER INFORMATION

Asphyxiant in high concentrations.
Keep container in well ventilated place.
Do not breathe the gas.
Ensure all national/local regulations are observed.
Contact with liquid may cause cold burns/frost bite.
The hazard of asphyxiation is often overlooked and must be stressed during operator training.
Before using this product in any new process or experiment, a thorough material compatibility and safety study should be carried out.
Details given in this document are believed to be correct at the time of going to press. Whilst proper care has been taken in the preparation of this document, no liability for injury or damage resulting from its use can be accepted.

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This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

This MSDS is for information purposes only and is subject to change without notice. [Prior to purchase of products, please contact your local Air Liquide office for a complete MSDS (with Manufacturer's name and emergency phone number).]

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