

Safety Data Sheet

Product : **Propylene oxide**
MSDS Nr : 363-00-2001BOC(A) Version : 1

Page :1/5
Date : 29/02/2008

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY

Product name Propylene oxide
Chemical formula C₃H₆O
Company identification see heading and/or footer
Emergency phone numbers see heading and/or footer

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 75-56-9
EC Nr (from EINECS) 200-879-2

3 HAZARDS IDENTIFICATION

Hazards identification Liquid.
May cause heritable genetic damage
May cause cancer by inhalation
Extremely flammable
Toxic by inhalation.
Irritating to eyes, respiratory system and skin.

4 FIRST AID MEASURES

Inhalation Toxic by inhalation.
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 May cause chemical burns to skin and cornea (with temporary disturbance to vision)
Immediately flush eyes thoroughly with water for at least 15 minutes.
Remove contaminated clothing
Obtain medical assistance

Ingestion Rinse mouth with water, do not induce vomiting, call a doctor.

5 FIRE FIGHTING MEASURES

Specific hazards Exposure to fire may cause containers to rupture/explode.
Hazardous combustion products Incomplete combustion may form carbon monoxide.
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.

Safety Data Sheet

Product :

Propylene oxide

Page :2/5

MSDS Nr : 363-00-2001BOC(A)

Version : 1

Date : 29/02/2008

Continue water spray from protected position until container stays cool.
Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.
Use self-contained breathing apparatus.
Use chemically protective clothing.

Special protective equipment for fire fighters

6 ACCIDENTAL RELEASE MEASURES

Personal precautions

Evacuate area.
Use self-contained breathing apparatus and chemically protective clothing.
Eliminate ignition sources.
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.
Keep area evacuated and free from ignition sources until any spilled liquid has evaporated.
(Ground free from frost).

7 HANDLING AND STORAGE

Handling and storage

Avoid exposure, obtain special instructions before use.
Ensure equipment is adequately earthed.
Suck back of water into the container must be prevented.
Purge air from system before introducing gas.
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.
Keep away from ignition sources (including static discharges).
Segregate from oxidant gases and other oxidants in store.
Refer to supplier's container handling instructions.
Keep container below 50°C in a well ventilated place.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure limit value for country

UK: 1,2-Propylene oxide - LTEL: 5ppm (EH40/2005)

Personal protection

Ensure adequate ventilation.
Protect eyes, face and skin from liquid splashes.
Do not smoke while handling product.
Keep self contained breathing apparatus readily available for emergency use.
Keep suitable chemically resistant protective clothing readily available for emergency use.

Safety Data Sheet

Product :

Propylene oxide

Page :3/5

MSDS Nr : 363-00-2001BOC(A)

Version : 1

Date : 29/02/2008

9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular weight	58.079
Melting point	-112 °C
Boiling point	33.9 °C
Critical temperature	209 °C
Relative density, gas	2 (air=1)
Relative density, liquid	0.8 (water=1)
Vapour Pressure 20°C	0.6 bar
Solubility mg/l water	No reliable data available.
Appearance/Colour	Colourless liquid
Odour	Ethereal
	Poor warning properties at low concentrations.
Flammability range	2.1-21.5 vol% in air.
Autoignition temperature	430 °C
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	Can form explosive mixture with air. May react violently with oxidants. May decompose violently at high temperature and/or pressure or in the presence of a catalyst May polymerise. Inhibitor usually added.
--------------------------	---

11 TOXICOLOGICAL INFORMATION

General	May have carcinogenic effect. Damage to central nervous system. Delayed fatal pulmonary oedema possible. May cause irritation to the respiratory tract.
---------	--

12 ECOLOGICAL INFORMATION

General	No known ecological damage caused by this product.
---------	--

13 DISPOSAL CONSIDERATIONS

General	Avoid discharge to atmosphere. Do not discharge into any place where its accumulation could be dangerous. Do not discharge into areas where there is a risk of forming an explosive mixture with air. Waste gas should be flared through a suitable burner with flash back arrestor. Contact supplier if guidance is required.
---------	--

Safety Data Sheet

Product :

Propylene oxide

Page :4/5

MSDS Nr : 363-00-2001BOC(A)

Version : 1

Date : 29/02/2008

14 TRANSPORT INFORMATION

Proper shipping name	PROPYLENE OXIDE
UN Nr	1280
Class	3 (Flammable liquids)
ADR/RID Classification code	F1
ADR/RID Hazard Nr	33
Packing group	I
Labelling ADR	Label 3: Danger of fire (flammable liquid).
IMDG EmS codes	F-E, S-D
IMDG Marine pollutant	No
IATA passenger packing instruction	306
IATA passenger max. quantity/pack	1 L
IATA cargo packing instruction	304
IATA cargo max. quantity/pack	30 L
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	603-055-00-4.
EC Classification	F+;R12 Carc.Cat.2;R45 Muta.Cat2;R46 Xn;R20/21/22 Xi;R36/37/38
-Symbols	F+: Extremely flammable T: Toxic
Labelling of cylinders	
-Symbols	Label 3: Danger of fire (flammable liquid).
-Risk phrases	R12 Extremely flammable. R20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R36/37/38 Irritating to eyes, respiratory system and skin. R45 May cause cancer. R46 May cause heritable genetic damage
-Safety phrases	S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S53 Avoid exposure, obtain special instructions before use.

Safety Data Sheet

Product :

Propylene oxide

Page :5/5

MSDS Nr : 363-00-2001BOC(A)

Version : 1

Date : 29/02/2008

16 OTHER INFORMATION

Ensure all national/local regulations are observed.

Ensure operators understand the flammability hazard.

Users of breathing apparatus must be trained.

Ensure operators understand the toxicity hazard.

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.

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.

End of document.

Number of pages :5