

Creation Date 20-Apr-2010

Revision Date 11-Nov-2010

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Description:

Propylene oxide

Cat No.

220160000; 220160010; 220160025; 220160050

Synonyms

1,2-Epoxypropane; Methyloxirane

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use

Laboratory chemicals

Uses advised against

No Information available

Details of the supplier of the safety data sheet

Company

Acros Organics BVBA
Janssen Pharmaceuticaaan 3a
2440 Geel, Belgium

E-mail address

begel.sdsdesk@thermofisher.com

Emergency Telephone Number

For information in the US, call: 800-ACROS-01

For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99

Emergency Number, US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300

CHEMTREC Phone Number, Europe: 703-527-3887

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute oral toxicity	Category 4
Acute dermal toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Skin Corrosion / irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2A
Germ Cell Mutagenicity	Category 1B
Carcinogenicity	Category 1B
Specific target organ systemic toxicity (single exposure)	Category 3
Flammable liquids.	Category 1

Classification according to EU Directives 67/548/EEC or 1999/45/EC

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

Symbol(s)

T - Toxic

R -phrase(s)

F+ - Extremely flammable

R45 - May cause cancer

R46 - May cause heritable genetic damage

R12 - Extremely flammable

Risk Combination Phrases

R20/21/22 - Harmful by inhalation, in contact with skin and if swallowed

R36/37/38 - Irritating to eyes, respiratory system and skin

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2. HAZARDS IDENTIFICATION

Label Elements



Signal Word

Danger

Hazard Statements

H302 - Harmful if swallowed
H319 - Causes serious eye irritation
H312 - Harmful in contact with skin
H332 - Harmful if inhaled
H340 - May cause genetic defects
H350 - May cause cancer
H315 - Causes skin irritation
H335 - May cause respiratory irritation
H224 - Extremely flammable liquid and vapor

Precautionary Statements - EU (§28, 1272/2008)

P280 - Wear protective gloves/protective clothing/eye protection/face protection
P201 - Obtain special instructions before use
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P240 - Ground/Bond container and receiving equipment
P243 - Take precautionary measures against static discharge
P403 + P235 - Store in a well-ventilated place. Keep cool

Other Hazards

No information available.

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3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC No.	Weight %	CAS-No	Classification	GHSCLAS	REACH Reg. No.
Propylene oxide 75-56-9	EEC No. 200-879-2	>95	75-56-9	F+;R12 Carc.Cat.2;R45 Muta.Cat.2;R46 Xn;R20/21/22 Xi;R36/37/38	Acute Tox. 4 (H302) Acute Tox. 4 (H312) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Muta. 1B (H340) Carc. 1B (H350) STOT SE 3 (H335) Flam. Liq. 1 (H224)	-

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

4. FIRST AID MEASURES

Description of first aid measures

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
Immediate medical attention is required

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes Immediate medical attention is required

Ingestion

Do not induce vomiting Call a physician or Poison Control Center immediately

Inhalation

Move to fresh air If breathing is difficult, give oxygen Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device Immediate medical attention is required

Notes to Physician

Treat symptomatically

5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable Extinguishing Media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide Cool closed containers exposed to fire with water spray

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

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Extremely flammable Containers may explode when heated Vapors may form explosive mixtures with air Vapors may travel to source of ignition and flash back

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear Thermal decomposition can lead to release of irritating gases and vapors

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental precautions

Should not be released into the environment.

Methods and material for containment and cleaning up

Soak up with inert absorbent material. Keep in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Use only under a chemical fume hood Wear personal protective equipment Do not get in eyes, on skin, or on clothing Keep away from open flames, hot surfaces and sources of ignition Use only non-sparking tools Use explosion-proof equipment Do not breathe vapors/dust Do not ingest Take precautionary measures against static discharges

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place Flammables area Keep away from heat and sources of ignition

Specific End Uses

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure limits

Component

Propylene oxide

European Union	The United Kingdom	France	Belgium	Spain
	Capable of causing cancer and/or heritable genetic damage	VME: 20 ppm VME: 50 mg/m ³	TWA: 5 mg/m ³ TWA: 2 ppm	VLA-ED: 12 mg/m ³ VLA-ED: 5 ppm

Component

Propylene oxide

Italy	Portugal	The Netherlands	Finland	Denmark
	TWA: 2 ppm	TWA: 6 mg/m ³	TWA: 12 mg/m ³ TWA: 5 ppm	TWA: 12 mg/m ³ TWA: 5 ppm

Component

Propylene oxide

Austria	Switzerland	Poland	Norway	Ireland
	MAK: 6 mg/m ³ MAK: 2.5 ppm	NDS: 9 mg/m ³	TWA: 1 ppm TWA: 2 mg/m ³	TWA: 12 mg/m ³ TWA: 5 ppm

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Derived No Effect Level (DNEL)
Predicted No Effect Concentration (PNEC)

No information available.
No information available.

Exposure controls

Engineering Measures

Use only under a chemical fume hood Ensure that eyewash stations and safety showers are close to the workstation location Use explosion-proof electrical/ventilating/lighting/equipment

Personal protective equipment

Eye Protection

Safety glasses with side-shields

Hand Protection

Protective gloves

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice

Environmental exposure controls

No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Liquid

Appearance

Colorless

odor

aromatic

pH

No information available.

Vapor Pressure

590 mbar @ 20 °C

Vapor Density

2.0 (Air = 1.0)

Viscosity

0.32 mPa s at 20 °C

Boiling Point/Range

34°C / 93.2°F

Melting Point/Range

-112°C / -169.6°F

Flash Point

-37°C / -34.6°F

Explosion Limits

Lower

1.9 Vol%

Upper

45 Vol%

Evaporation Rate

No information available.

Water Solubility

40g/100ml (20°C)

Specific Gravity

0.830

Molecular Formula

C3 H6 O

Molecular Weight

58.08

10. STABILITY AND REACTIVITY

Reactivity

Reactive Hazard

Yes

Chemical Stability

Stable under normal conditions.

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Possibility of Hazardous Reactions

Hazardous Polymerization

Hazardous polymerization may occur.

Hazardous Reactions .

None under normal processing..

Conditions to Avoid

Incompatible products, Excess heat, Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials

Strong oxidizing agents, Acids, Bases, Amines, copper, Copper alloys, Peroxides.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO₂).

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Acute Toxicity

Product Information

Product does not present an acute toxicity hazard based on known or supplied information

Component Information

Component

Propylene oxide

LD50 Oral	LD50 Dermal	LC50 Inhalation
520 mg/kg (Rat)		

Chronic Toxicity

Carcinogenicity

Component

Propylene oxide

The table below indicates whether each agency has listed any ingredient as a carcinogen

IARC	UK
Group 2B	

Sensitization

No information available.

Mutagenic Effects

No information available

Reproductive Effects

No information available.

Developmental Effects

No information available.

Target Organs

None known.

Other Adverse Effects

See actual entry in RTECS for complete information

Endocrine Disruptor Information

None known

12. ECOLOGICAL INFORMATION

Toxicity

Ecotoxicity effects

Do not empty into drains

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12. ECOLOGICAL INFORMATION

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Propylene oxide	240 mg/L EC50 = 96 h	215 mg/L LC50 96 h	EC50 = 3300 mg/L 160 min	350 mg/L EC50 = 48 h

Persistence and degradability

Not readily biodegradable

Bioaccumulative potential

No information available.

Component	log Pow
Propylene oxide	0.08

Mobility in soil

No information available.

Results of PBT and vPvB assessment

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products

Dispose of in accordance with local regulations

Contaminated Packaging

Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

IMDG/IMO

UN-No 1280
Hazard Class 3
Packing Group I
Proper Shipping Name PROPYLENE OXIDE

ADR

UN-No 1280
Hazard Class 3
Packing Group I
Proper Shipping Name PROPYLENE OXIDE

IATA

UN-No 1280
Hazard Class 3
Packing Group I
Proper Shipping Name PROPYLENE OXIDE

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14. TRANSPORT INFORMATION

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Propylene oxide	200-879-2	-		X	X	-	X	X	X	X	KE-24565 X

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory Lists

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

CHINA - China Inventory of Existing Chemical Substances

AICS - Inventory of Chemical Substances

KECL - Existing and Evaluated Chemical Substances

Chemical Safety Assessment

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2-3

R45 - May cause cancer

R46 - May cause heritable genetic damage

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

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Revision Summary Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text

End of Safety Data Sheet