SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006
Version 3.0 Revision Date 30.08.2009
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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

Product name : β-Propiolactone

Product Number : P5648
Brand : Sigma

Company : Sigma-Aldrich (Shanghai) Trading Co.,Ltd
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2. HAZARDS IDENTIFICATION

Risk advice to man and the environment
May cause cancer. Also very toxic by inhalation. Irritating to eyes and skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 3-Hydroxypropionic acid lactone
Hydracrylic acid β-lactone

Formula : $C_3H_4O_2$
Molecular Weight : 72,06 g/mol

CAS-No.	EC-No.	Index-No.	Classification	Concentration
3-Propanolide				
57-57-8	200-340-1	606-031-00-1	T+, Carc.Cat.2, R45 - R26 - R36/38	-

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Avoid exposure - obtain special instructions before use.Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature: -20 °C

Hydrolyses readily.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Eye protection
Face shield and safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid

Safety data

pH	no data available
Melting point	-33 °C - lit.
Boiling point	162 °C - lit.
Flash point	70 °C - closed cup
Ignition temperature	no data available
Lower explosion limit	2,9 %(V)
Vapour pressure	4,5 hPa at 25 °C
Density	1,146 g/mL at 25 °C
Water solubility	soluble
Partition coefficient: n-octanol/water	log Pow: 0,46
Relative vapour density	2,49 - (Air = 1.0)

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong oxidizing agentsStrong oxidizing agents, Strong bases, Halogens, Thiocyanates, Thiosulfates

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

no data available

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

IARC: 2B - Group 2B: Possibly carcinogenic to humans (3-Propanolide)

Signs and Symptoms of Exposure

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

Potential Health Effects

Inhalation	May be fatal if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.
Target Organs	Skin,

Additional Information
RTECS: RQ7350000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

no data available

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

ADR/RID
UN-Number: 3382 Class: 6.1 Packing group: I
Proper shipping name: TOXIC BY INHALATION LIQUID, N.O.S. (3-Propanolide)

IMDG
UN-Number: 3382 Class: 6.1 Packing group: I EMS-No: F-A, S-A
Proper shipping name: TOXIC BY INHALATION LIQUID, N.O.S. (3-Propanolide)
Marine pollutant: No

IATA
UN-Number: 3382 Class: 6.1
Proper shipping name: Toxic by inhalation liquid n.o.s. (3-Propanolide)
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION

Labelling according to EC Directives

EC Label

Hazard symbols

T+	Very toxic

R-phrase(s)

R45	May cause cancer.
R26	Also very toxic by inhalation.
R36/38	Irritating to eyes and skin.

S-phrase(s)

S53	Avoid exposure - obtain special instructions before use.
S45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Restricted to professional users.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.