

MATERIAL SAFETY DATA SHEET

Date Printed: 06/26/2008

Date Updated: 03/02/2007

Version 1.13

Section 1 - Product and Company Information

Product Name PROPIONIC ACID, 99%
Product Number 109797
Brand ALDRICH

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US

Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313 No
PROPIONIC ACID	79-09-4	No

Formula C3H6O2
Synonyms Acide propionique (French) * Carboxyethane *
Ethanecarboxylic acid * Ethylformic acid *
Kyselina propionova (Czech) * Luprosil *
Metacetic acid * Methyl acetic acid * Propanoic
acid * Propionic acid (ACGIH) * Propionic acid
grain preserver * Prozoin * Pseudoacetic acid *
Sentry grain preserver * Tenox P grain
preservative

RTECS Number: UE5950000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.

Toxic in contact with skin. Causes burns.

Readily absorbed through skin. Target organ(s): Central nervous system. Blood. Combustible.

HMIS RATING

HEALTH: 3

FLAMMABILITY: 2

REACTIVITY: 0

NFPA RATING

HEALTH: 3

FLAMMABILITY: 2

REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is

conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLASH POINT

129.2 °F 54 °C Method: closed cup

EXPLOSION LIMITS

Lower: 2.9 % Upper: 12.1 %

AUTOIGNITION TEMP

513 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed. Keep away from heat and open flame.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). 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.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash contaminated clothing before reuse. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	10 PPM
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	10 PPM
		STEL	15 PPM

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	30 mg/m3
Poland		NDSch	45 mg/m3
Poland		NDSP	

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Clear liquid	
	Color: Colorless	
Property	Value	At Temperature or Pressure
Molecular Weight	74.08 AMU	
pH	2.5	20 °C Concentration: 100 g/l
BP/BP Range	141.0 - 142.0 °C	
MP/MP Range	- 24.0 - -23. °C	
Freezing Point	N/A	
Vapor Pressure	2.4 mmHg	20 °C
Vapor Density	2.55 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.992 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	

Evaporation Rate	N/A	
Viscosity	10 Pas	25 °C
Surface Tension	27.21 mN/m	15 °C
Partition Coefficient	Log Kow: 0.25	
Decomposition Temp.	N/A	
Flash Point	129.2 °F 54 °C	Method: closed cup
Explosion Limits	Lower: 2.9 % Upper: 12.1 %	
Flammability	N/A	
Autoignition Temp	513 °C	
Refractive Index	1.387	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water: Soluble. Other Solvents: ALCOHOL, ETHER, CHLOROFORM	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes burns.

Skin Absorption: Readily absorbed through skin. May be harmful if absorbed through the skin.

Eye Contact: Causes burns.

Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Blood. Liver. Kidneys. Central nervous system.

SIGNS AND SYMPTOMS OF EXPOSURE

May cause an asthmatic-like bronchitis. Nausea, dizziness, and headache. Blood effects. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

TOXICITY DATA

Oral

Rat

*

LD50

Skin

Rabbit

500 mg/kg
LD50
4 HR
Inhalation
Rat
>4.9 MG/L
LC50

Oral
Rat
2600 mg/kg
LD50

Parenteral
Rat
3500 MG/KG
LD50

Intravenous
Mouse
625 MG/KG
LD50

Remarks: Behavioral:Convulsions or effect on seizure threshold.

Skin
Rabbit
500 UL/KG
LD50

Oral
Mammal
1640 mg/kg
LD50

IRRITATION DATA

Skin
Rabbit
Remarks: Severe irritation effect

Skin
Rabbit
495 mg
Remarks: Open irritation test

Eyes
Rabbit
0.99 mg
Remarks: Severe irritation effect

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 2500 UMOL/L
Cell Type: lymphocyte
Mutation test: Sister chromatid exchange

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: EC50 Algae
Time: 72 h

Value: 45.8 mg/l

Test Type: EC50 Daphnia

Species: Daphnia magna

Time: 48 h

Value: 21.0 - 24.6 mg/l

Test Type: LC50 Fish

Species: Lepomis macrochirus (Bluegill)

Time: 96 h

Value: 73.0 - 115.0 mg/l

Test Type: LC50 Fish

Species: Onchorhynchus mykiss (Rainbow trout)

Time: 96 h

Value: 51.0 - 73.2 mg/l

ELIMINATION

Elimination: > 70 %

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

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

Section 14 - Transport Information

DOT

Proper Shipping Name: Propionic acid

UN#: 3463

Class: 8

Packing Group: Packing Group II

Hazard Label: Corrosive

Hazard Label: Flammable liquid

PIH: Not PIH

IATA

Proper Shipping Name: Propionic acid

IATA UN Number: 3463

Hazard Class: 8

Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: C

Indication of Danger: Corrosive.

R: 34

Risk Statements: Causes burns.

S: 23-36-45

Safety Statements: Do not breathe vapor. Wear suitable protective clothing. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Toxic.

Risk Statements: Toxic in contact with skin. Causes burns.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US Statements: Readily absorbed through skin. Target organ(s): Central nervous system. Blood. Combustible.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

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 Inc., 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. Copyright 2008 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.