

SAFETY DATA SHEET

Version 5.9
Revision Date 10/01/2018
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1. PRODUCT AND COMPANY IDENTIFICATION**1.1 Product identifiers**

Product name : Acrolein

Product Number : 110221
Brand : Aldrich

CAS-No. : 107-02-8

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Canada Co.
2149 Winston Park Drive
OAKVILLE ON L6H 6J8
CANADA

Telephone : +1 9058299500
Fax : +1 9058299292

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION**2.1 Classification of the substance or mixture****GHS Classification in accordance with Hazardous Products Regulations (HPR) (SOR/2015-17)**

Flammable liquids (Category 2), H225
Skin sensitisation (Category 1), H317
Carcinogenicity (Category 2), H351
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H401 Toxic to aquatic life.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat, hot surfaces, sparks, open flames and other

P233	ignition sources. No smoking.
P240	Keep container tightly closed.
P241	Ground and bond container and receiving equipment.
P242	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P243	Use non-sparking tools.
P261	Take action to prevent static discharges.
P272	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Contaminated work clothing should not be allowed out of the workplace.
P280	Avoid release to the environment.
	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364	Take off contaminated clothing and wash it before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Sensitising components:

Hydroquinone
May produce an allergic reaction.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Corrosive to the respiratory tract.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	: 2-Propenal
Formula	: C ₃ H ₄ O
Molecular weight	: 56.06 g/mol
CAS-No.	: 107-02-8

Hazardous components

Component	Classification	Concentration*
Acrolein		
	Flam. Liq. 2; Acute Tox. 2; Acute Tox. 1; Acute Tox. 2; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 1; Aquatic Chronic 1; H225, H300 + H310 + H330, H314, H410	90 - 100 %
* Weight percent		
Hydroquinone		
	Acute Tox. 4; Eye Dam. 1; Skin Sens. 1; Muta. 2; Carc. 2; Aquatic Acute 1; Aquatic Chronic 1; H302, H317, H318, H341, H351, H410	0.25 - 1 %
* Weight percent		

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

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

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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 2 - 8 °C

Store under inert gas. Handle and open container with care. Light sensitive. Heat- and air-sensitive.

Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Acrolein	107-02-8	TWAEV	0.1 ppm 0.23 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		STEV	0.3 ppm 0.69 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		(c)	0.1 ppm 0.2 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
Remarks	Substance may be readily absorbed through intact skin			
		C	0.1 ppm	Canada. British Columbia OEL
	Contributes significantly to the overall exposure by the skin route.			
		C	0.1 ppm	USA. ACGIH Threshold Limit Values (TLV)
Hydroquinone	123-31-9	TWA	2 mg/m ³	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
		TWAEV	2 mg/m ³	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
		TWA	1 mg/m ³	Canada. British Columbia OEL
Remarks	Substance with specific evidence of sensitization by dermal route			
		TWA	1 mg/m ³	USA. ACGIH Threshold Limit Values (TLV)

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 120 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (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).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---|---|
| a) Appearance | Form: liquid |
| b) Odour | No data available |
| c) Odour Threshold | No data available |
| d) pH | 6 at 100 g/l at 25 °C (77 °F) |
| e) Melting point/freezing point | Melting point/range: -87 °C (-125 °F) - lit. |
| f) Initial boiling point and boiling range | 53 °C (127 °F) - lit. |
| g) Flash point | -29 °C (-20 °F) - closed cup |
| h) Evaporation rate | No data available |
| i) Flammability (solid, gas) | No data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 31 %(V)
Lower explosion limit: 2.8 %(V) |
| k) Vapour pressure | 1,090.4 hPa (817.9 mmHg) at 55 °C (131 °F)
279.2 hPa (209.4 mmHg) at 20 °C (68 °F) |
| l) Vapour density | 1.94 - (Air = 1.0) |

m) Relative density	0.839 g/cm ³ at 25 °C (77 °F)
n) Water solubility	soluble
o) Partition coefficient: n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

Surface tension	24 mN/m at 20 °C (68 °F)
Relative vapour density	1.94 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

Contains the following stabiliser(s):

Hydroquinone (>=0.25 - <=0.35 %)

10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Oxidizing agents, Oxygen, Bases, Strong acids

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 26 mg/kg

LC50 Inhalation - Rat - 4 h - 18 mg/m³

LD50 Dermal - Rabbit - 200 mg/kg

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Severe skin irritation - 24 h

(Draize Test)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Severe eye irritation - 24 h

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

Human
fibroblast
DNA damage

Human
lymphocyte
Sister chromatid exchange

Rat
DNA inhibition

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available

Reproductive toxicity - Rat - Oral
Effects on Newborn: Growth statistics (e.g., reduced weight gain).

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: AS1050000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Cough, Shortness of breath, Headache, Nausea

Stomach - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence (Hydroquinone)

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - Lepomis macrochirus (Bluegill) - 0.08 - 0.12 mg/l - 96.0 h

LC100 - Leuciscus idus (Golden orfe) - 0.3 - 4.2 mg/l - 48.0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - 0.04 - 0.10 mg/l - 48 h

Toxicity to algae IC50 - Algae - 0.05 mg/l - 72 h

12.2 Persistence and degradability

Biodegradability Biotic/Aerobic Biochemical oxygen demand within 5 days

Biotic/Aerobic - Exposure time 7 d

Biotic/Aerobic Chemical oxygen demand - Exposure time 70 d

Biotic/Aerobic Biochemical oxygen demand within 5 days

12.3 Bioaccumulative potential

Bioaccumulation Lepomis macrochirus - 14 d
- 13.1 µg/l

Bioconcentration factor (BCF): 344

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

TDG (Canada)

UN number: 1092 Class: 6.1 (3) Packing group: I
Proper shipping name: ACROLEIN, STABILIZED

IMDG

UN number: 1092 Class: 6.1 (3) Packing group: I EMS-No: F-E, S-D
Proper shipping name: ACROLEIN, STABILIZED
Marine pollutant: yes Marine pollutant: yes

IATA

UN number: 1092 Class: 6.1 (3)
Proper shipping name: Acrolein, stabilized
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Dam.	Serious eye damage
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H300 + H310 + H330	Fatal if swallowed, in contact with skin or if inhaled.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.

H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H341	Suspected of causing genetic defects.
H351	Suspected of causing cancer.
H401	Toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Muta.	Germ cell mutagenicity
Skin Corr.	Skin corrosion
Skin Sens.	Skin sensitisation

Further information

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