SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name: Acrylic acid

Product Number: 147230
Brand: Aldrich
Index-No.: 607-061-00-8
CAS-No.: 79-10-7

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 Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

- Flammable liquids (Category 3), H226
- Acute toxicity, Oral (Category 4), H302
- Acute toxicity, Inhalation (Category 4), H332
- Acute toxicity, Dermal (Category 4), H312
- Skin corrosion (Category 1A), H314
- Serious eye damage (Category 1), H318
- Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
- Short-term (acute) aquatic hazard (Category 1), H400
- Long-term (chronic) aquatic hazard (Category 2), H411
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)**
- H226: Flammable liquid and vapor.
- H302 + H312 + H332: Harmful if swallowed, in contact with skin or if inhaled.
- H314: Causes severe skin burns and eye damage.
- H335: May cause respiratory irritation.
- H400: Very toxic to aquatic life.
- H411: Toxic to aquatic life with long lasting effects.

**Precautionary statement(s)**
- P210: Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
- P233: Keep container tightly closed.
- P240: Ground/bond container and receiving equipment.
- P241: Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242: Use only non-sparking tools.
- P243: Take precautionary measures against static discharge.
- P261: Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
- P264: Wash skin thoroughly after handling.
- P270: Do not eat, drink or smoke when using this product.
- P271: Use only outdoors or in a well-ventilated area.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P301 + P312 + P330: IF SWALLOWED: Call a POISON CENTER/ doctor if you feel unwell. Rinse mouth.
- P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
- P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P304 + P340 + P310: IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
- P305 + P351 + P338 + P310: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
- P363: Wash contaminated clothing before reuse.
- P370 + P378: In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- P391: Collect spillage.
- P403 + P233: Store in a well-ventilated place. Keep container tightly closed.
- 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.

2.3 **Hazards not otherwise classified (HNOC) or not covered by GHS** - none
SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>acrylic acid</td>
<td>Flam. Liq. 3; Acute Tox. 4; Skin Corr. 1A; Eye Dam. 1; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 2; H226, H302, H332, H312, H314, H318, H335, H400, H411</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Concentration limits: &gt;= 1 %: STOT SE 3, H335; &lt;= 100 %</td>
<td></td>
</tr>
</tbody>
</table>

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

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
First aiders need to protect themselves. Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower. Call a physician immediately.

In case of eye contact
After eye contact: rinse out with plenty of water. Immediately call in ophthalmologist. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most), avoid vomiting (risk of perforation). Call a physician immediately. Do not attempt to neutralise.

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
SECTION 5: Firefighting measures

5.1 Extinguishing media

- **Suitable extinguishing media**
  - Water
  - Foam
  - Carbon dioxide (CO2)
  - Dry powder

- **Unsuitable extinguishing media**
  - For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

- **Carbon oxides**
  - Flash back possible over considerable distance.
  - Combustible.
  - Vapors are heavier than air and may spread along floors.
  - Forms explosive mixtures with air at elevated temperatures.
  - Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

- Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

- Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

- Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up

- Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

- For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- **Advice on safe handling**
  - Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.
Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Hygroscopic.

Storage class
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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>acrylic acid</td>
<td>79-10-7</td>
<td>TWA</td>
<td>2 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
</tbody>
</table>

Remarks
Not classifiable as a human carcinogen
Danger of cutaneous absorption

<table>
<thead>
<tr>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>TWA</td>
<td>2 ppm</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td>6 mg/m3</td>
<td>USA. NIOSH Recommended Exposure Limits</td>
</tr>
<tr>
<td>PEL</td>
<td>2 ppm 6.9 mg/m3</td>
<td>California permissible exposure limits for chemical contaminants (Title 8, Article 107)</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Appropriate engineering controls
Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Tightly fitting safety goggles
**Skin protection**
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

**Full contact**
Material: butyl-rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Butoject® (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

**Splash contact**
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 120 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

**Body Protection**
Flame retardant antistatic protective clothing.

**Respiratory protection**
Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Control of environmental exposure**
Do not let product enter drains. Risk of explosion.

### SECTION 9: Physical and chemical properties

**9.1 Information on basic physical and chemical properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Form: liquid</td>
</tr>
<tr>
<td></td>
<td>Color: colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Melting point/range: 13 °C (55 °F) - lit.</td>
</tr>
<tr>
<td>Initial boiling point</td>
<td>139 °C 282 °F - lit.</td>
</tr>
</tbody>
</table>
and boiling range

- **Flash point**: 48.5 °C (119.3 °F) - closed cup - DIN 51755 Part 1
- **Evaporation rate**: No data available
- **Flammability (solid, gas)**: No data available
- **Upper/lower flammability or explosive limits**: No data available
- **Vapor pressure**: 5.29 hPa at 25 °C (77 °F)
- **Vapor density**: No data available
- **Density**: 1.051 g/cm³ at 25 °C (77 °F) - lit.  
  - Relative density: 1.0520 °C
- **Water solubility**: 1,000 g/l at 25 °C (77 °F)
- **Partition coefficient: n-octanol/water**: log Pow: 0.46 at 25 °C (77 °F) - Bioaccumulation is not expected.
- **Autoignition temperature**: 438 °C (820 °F) at 1,013 hPa
- **Decomposition temperature**: No data available
- **Viscosity**: No data available
- **Explosive properties**: No data available
- **Oxidizing properties**: none

### 9.2 Other safety information
- **Surface tension**: 69.6 mN/m at 1g/l at 20 °C (68 °F) - Surface tension
- **Dissociation constant**: 4.26 at 25 °C (77 °F)

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### SECTION 10: Stability and reactivity

#### 10.1 Reactivity
Vapor/air-mixtures are explosive at intense warming.

#### 10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

#### 10.3 Possibility of hazardous reactions
Reacts violently in contact with acids, amines, driers, polymerization accelerators and easily oxidized materials.  
Polymerization can occur.

#### 10.4 Conditions to avoid
Heating.
10.5 Incompatible materials
Copper, Nickel, Mild steel, Zinc

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Acute toxicity estimate Oral - 500 mg/kg
(Calculation method)
LD50 Oral - Rat - male - 1,000 - < 2,000 mg/kg
(OECD Test Guideline 423)
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)
Symptoms: If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the esophagus and the stomach.
Acute toxicity estimate Inhalation - 4 h - 11 mg/l - vapor (Calculation method)

LC50 Inhalation - Rat - 4 h - 3.6 mg/l - vapor
Remarks: (Lit.)
(Regulation (EC) No 1272/2008, Annex VI)
Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:; damage of respiratory tract
Inhalation: Corrosive to respiratory system.
Acute toxicity estimate Dermal - 1,100 mg/kg
(Calculation method)
LD50 Dermal - Rabbit - male - 1,000 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: Causes severe burns.
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Causes burns.
Remarks: (IUCLID)
Remarks: Causes serious eye damage.

Respiratory or skin sensitization
Sensitisation test: - Guinea pig
Result: negative
Remarks: (Lit.)

Germ cell mutagenicity
Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative
Remarks: (National Toxicology Program)
Test Type: In vitro mammalian cell gene mutation test  
Test system: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  

Test Type: unscheduled DNA synthesis assay  
Test system: rat hepatocytes  
Metabolic activation: without metabolic activation  
Method: OECD Test Guideline 482  
Result: negative  

Test Type: Mutagenicity (mammal cell test): chromosome aberration.  
Species: Rat  
Cell type: Bone marrow  
Application Route: Oral  
Method: OECD Test Guideline 475  
Result: negative  

Test Type: dominant lethal test  
Species: Mouse  
Cell type: Intrauterine  
Application Route: Oral  
Result: negative  
Remarks: (ECHA)  

**Carcinogenicity**

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.  
NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.  
OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.  

**Reproductive toxicity**

No data available  

**Specific target organ toxicity - single exposure**  
May cause respiratory irritation. - Respiratory system  

**Specific target organ toxicity - repeated exposure**
No data available  

**Aspiration hazard**
No data available  

11.2 Additional Information

Repeated dose toxicity - Rat - male - Oral - NOAEL (No observed adverse effect level) - 40 mg/kg - LOAEL (Lowest observed adverse effect level) - 100 mg/kg  

RTECS: AS4375000  
burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes
The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada

and upper respiratory tract, eyes, and skin., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

Liver - Irregularities - Based on Human Evidence
Liver - Irregularities - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish: flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 27 mg/l - 96 h (US-EPA)

Toxicity to daphnia and other aquatic invertebrates: flow-through test EC50 - Daphnia magna (Water flea) - 95 mg/l - 48 h (US-EPA)

Toxicity to algae: IC50 - Desmodesmus subspicatus (green algae) - 0.13 mg/l - 72 h (Regulation (EC) No. 440/2008, Annex, C.3) Remarks: (IUCLID)

EC10 - Desmodesmus subspicatus (green algae) - 0.03 mg/l - 72 h (Regulation (EC) No. 440/2008, Annex, C.3) Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): flow-through test NOEC - Daphnia magna (Water flea) - 3.8 mg/l - 21 d (US-EPA)

12.2 Persistence and degradability

Biodegradability: Result: 100 % - Readily eliminated from water (OECD Test Guideline 302B)

Result: 81 % - Readily biodegradable. (OECD Test Guideline 301D)

12.3 Bioaccumulative potential

No data available

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 Endocrine disrupting properties

No data available

Aldrich - 147230
12.7 Other adverse effects
Biological effects:
Neutralise before sewage disposal.
Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations.
Leave chemicals in original containers. No mixing with other waste. Handle uncleaned
containers like the product itself.

SECTION 14: Transport information

DOT (US)
UN number: 2218  Class: 8 (3)  Packing group: II
Proper shipping name: Acrylic acid, stabilized
Reportable Quantity (RQ): 5000 lbs
Marine pollutant: yes  Poison Inhalation Hazard: No

IMDG
UN number: 2218  Class: 8 (3)  Packing group: II EMS-No: F-E, S-C
Proper shipping name: ACRYLIC ACID, STABILIZED
Marine pollutant: yes
Marine pollutant: yes

IATA
UN number: 2218  Class: 8 (3)  Packing group: II
Proper shipping name: Acrylic acid, stabilized

SECTION 15: Regulatory information

SARA 302 Components
This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III,
Section 313:

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Revision Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>acrylic acid</td>
<td>79-10-7</td>
<td>2007-07-01</td>
</tr>
</tbody>
</table>

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components
acrylic acid  
CAS-No.  
79-10-7  
Revision Date  
2007-07-01

Pennsylvania Right To Know Components
acrylic acid  
CAS-No.  
79-10-7  
Revision Date  
2007-07-01

SECTION 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 Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Revision Date: 08/03/2023  
Print Date: 08/12/2023