

# SAFETY DATA SHEET

Version 8.5  
Revision Date 10/08/2021  
Print Date 02/11/2022

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

### 1.1 Product identifiers

Product name : Acrylamide  
Product Number : 08267  
Brand : Sigma-Aldrich  
Index-No. : 616-003-00-0  
CAS-No. : 79-06-1

### 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)

Acute toxicity, Oral (Category 3), H301  
Acute toxicity, Inhalation (Category 4), H332  
Acute toxicity, Dermal (Category 4), H312  
Skin irritation (Category 2), H315  
Eye irritation (Category 2A), H319  
Skin sensitization (Category 1), H317  
Germ cell mutagenicity (Category 1B), H340  
Carcinogenicity (Category 1B), H350  
Reproductive toxicity (Category 2), H361  
Specific target organ toxicity - repeated exposure, Oral (Category 1), Peripheral nervous system, H372  
Short-term (acute) aquatic hazard (Category 3), H402

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)

H301	Toxic if swallowed.
H312 + H332	Harmful in contact with skin or if inhaled.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H340	May cause genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs (Peripheral nervous system) through prolonged or repeated exposure if swallowed.
H402	Harmful to aquatic life.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe 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.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves/ protective clothing.
P281	Use personal protective equipment as required.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
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

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms	: Acrylic acid amide 2-Propenamide
Formula	: C <sub>3</sub> H <sub>5</sub> NO
Molecular weight	: 71.08 g/mol
CAS-No.	: 79-06-1
EC-No.	: 201-173-7
Index-No.	: 616-003-00-0

Component	Classification	Concentration
<b>acrylamide</b>		
	Acute Tox. 3; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Muta. 1B; Carc. 1B; Repr. 2; STOT RE 1; Aquatic Acute 3; H301, H332, H312, H315, H319, H317, H340, H350, H361, H372, H402	<= 100 %

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

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Consult a physician. Show this material 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

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.

#### If swallowed

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

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## SECTION 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

Carbon oxides

Nitrogen oxides (NO<sub>x</sub>)

Combustible.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

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

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. **Advice on safe handling**

Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.

#### Advice on protection against fire and explosion

Provide appropriate exhaust ventilation at places where dust is formed.

#### Hygiene measures

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

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.

### Storage stability

Recommended storage temperature  
15 - 25 °C

Moisture sensitive.

### Storage class

Storage class (TRGS 510): 6.1D: Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

## 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

Component	CAS-No.	Value	Control parameters	Basis
acrylamide	79-06-1	TWA	0.03 mg/m <sup>3</sup>	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Dermal Sensitization Suspected human carcinogen Danger of cutaneous absorption		
		TWA	0.03 mg/m <sup>3</sup>	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen Potential for dermal absorption		
		TWA	0.3 mg/m <sup>3</sup>	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation		
		PEL	0.03 mg/m <sup>3</sup>	California permissible exposure limits for chemical contaminants (Title 8, Article 107)
		Skin		

### 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

Face shield and safety glasses 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.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, 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 EC 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, 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 particle respirator type N100 (US) or type P3 (EN 143) 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.

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## **SECTION 9: Physical and chemical properties**

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

- |  |                         |
|--|-------------------------|
| a) Appearance                              | Form: solid             |
| b) Odor                                    | No data available       |
| c) Odor Threshold                          | No data available       |
| d) pH                                      | 5.2 - 6 at 500 g/l      |
| e) Melting point/freezing point            | 84 °C (183 °F)          |
| f) Initial boiling point and boiling range | 125 °C 257 °F at 33 hPa |

Sigma-Aldrich - 08267

Page 6 of 11

g) Flash point	138 °C (280 °F) - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	2.1 hPa at 84.50 °C (184.10 °F) 0.04 hPa at 40 °C(104 °F) 0.090 hPa at 25 °C(77 °F)
l) Vapor density	2.45 - (Air = 1.0)
m) Density	No data available
Relative density	No data available
n) Water solubility	200 g/l at 20 °C (68 °F)
o) Partition coefficient: n-octanol/water	log Pow: -0.67
p) Autoignition 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

Relative vapor density	2.45 - (Air = 1.0)
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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

Acids, Oxidizing agents, Iron and iron salts., Copper, Brass, Free radical initiators

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - female - 177 mg/kg  
(OECD Test Guideline 401)

Acute toxicity estimate Inhalation - 1.6 mg/l  
(Expert judgment)

LD50 Dermal - Rabbit - male and female - 1,141 mg/kg  
(OECD Test Guideline 402)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)  
No data available

#### Skin corrosion/irritation

Causes skin irritation. (Regulation (EC) No 1272/2008, Annex VI)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation - 24 h

(OECD Test Guideline 405)

(Regulation (EC) No 1272/2008, Annex VI)

#### Respiratory or skin sensitization

Maximization Test - Guinea pig

Result: positive

(OECD Test Guideline 406)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

#### Germ cell mutagenicity

May cause genetic defects.

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster lung cells

Metabolic activation: without metabolic activation

Method: OECD Test Guideline 473

Result: positive

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: dominant lethal test

Species: Rat

Application Route: Oral

Method: OECD Test Guideline 478

Result: positive

#### Carcinogenicity

Presumed to have carcinogenic potential for humans

IARC: 2A - Group 2A: Probably carcinogenic to humans (acrylamide)



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**

Suspected of damaging fertility.

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

Oral - Causes damage to organs through prolonged or repeated exposure. - Peripheral nervous system

**Aspiration hazard**

No data available

**11.2 Additional Information**

Repeated dose toxicity - Rat - male and female - Oral - 2 yr - NOAEL (No observed adverse effect level) - 0.5 mg/kg

RTECS: AS3325000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence

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**SECTION 12: Ecological information**

**12.1 Toxicity**

Toxicity to fish	static test LC50 - Oncorhynchus mykiss (rainbow trout) - 180 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	flow-through test EC50 - Daphnia magna (Water flea) - 98 mg/l - 48 h (US-EPA)
Toxicity to algae	static test NOEC - Pseudokirchneriella subcapitata - 56 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	EC50 - Photobacterium phosphoreum - 13,500 mg/l Remarks: (IUCLID)

**12.2 Persistence and degradability**

Biodegradability aerobic - Exposure time 28 d  
Result: 100 % - Readily biodegradable.  
(OECD Test Guideline 301D)

**12.3 Bioaccumulative potential**

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Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 72 h  
- 0.71 mg/l(acrylamide)

Bioconcentration factor (BCF): 1.65

#### 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

#### 12.7 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

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### SECTION 13: Disposal considerations

#### 13.1 Waste treatment methods

##### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

##### Contaminated packaging

Dispose of as unused product.

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### SECTION 14: Transport information

#### DOT (US)

UN number: 2074 Class: 6.1 Packing group: III

Proper shipping name: Acrylamide, solid

Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No

#### IMDG

UN number: 2074 Class: 6.1 Packing group: III EMS-No: F-A, S-A

Proper shipping name: ACRYLAMIDE, SOLID

#### IATA

UN number: 2074 Class: 6.1 Packing group: III

Proper shipping name: Acrylamide, solid

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**SECTION 15: Regulatory information****SARA 302 Components**

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
acrylamide	79-06-1	2008-11-03

**SARA 313 Components**

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

	CAS-No.	Revision Date
acrylamide	79-06-1	2008-11-03

**SARA 311/312 Hazards**

Acute Health Hazard, Chronic Health Hazard

**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
acrylamide	79-06-1	2008-11-03

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**SECTION 16: Other information****Further information**

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