

## SAFETY DATA SHEET

Version 4.10  
Revision Date 05/27/2016  
Print Date 10/04/2019

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**1. PRODUCT AND COMPANY IDENTIFICATION****1.1 Product identifiers**

Product name : Acrylamide

Product Number : A3553  
Brand : Sigma  
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  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA

Telephone : +1 800-325-5832  
Fax : +1 800-325-5052

**1.4 Emergency telephone number**

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

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**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 sensitisation (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  
Acute aquatic toxicity (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/ vapours/ 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 protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth.
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 person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor 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

## 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
Registration number	: 01-2119463260-48-XXXX

#### Hazardous components

Component	Classification	Concentration
<b>Acrylamide</b> Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	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, H312 + H332, H315, H317, H319, H340,	<= 100 %

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## 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

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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## 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

No data available

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## 6. ACCIDENTAL RELEASE MEASURES

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

Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, 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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## 7. HANDLING AND STORAGE

### 7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. 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.

Provide appropriate exhaust ventilation at places where dust is formed.  
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.

Light sensitive. Keep in a dry place.

Storage class (TRGS 510): 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

# 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## 8.1 Control parameters

### Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Acrylamide	79-06-1	TWA	0.300000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	Skin designation		
		TWA	0.030000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A Potential for dermal absorption		
		TWA	0.030000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		PEL	0.03 mg/m3	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 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, 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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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

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

- |   |   |
|---|---|
| a) Appearance                                   | Form: powder  |
| b) Odour  | No data available   |
| c) Odour Threshold                              | No data available   |
| d) pH   | 5.2 - 6 at 500 g/l  |
| e) Melting point/freezing point                 | Melting point/range: 82 - 86 °C (180 - 187 °F) - lit.   |
| f) Initial boiling point and boiling range      | 125 °C (257 °F) at 33 hPa (25 mmHg) - lit.  |
| 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) Vapour pressure                              | 2.1 hPa (1.6 mmHg) at 84.50 °C (184.10 °F)<br>0.04 hPa (0.03 mmHg) at 40 °C (104 °F)<br>0.0900 hPa (0.0675 mmHg) at 25 °C (77 °F) |
| l) Vapour density                               | 2.45 - (Air = 1.0)  |
| m) 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) 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

Relative vapour density 2.45 - (Air = 1.0)

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## 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

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Nitrogen oxides (NOx)

Other decomposition products - No data available

In the event of fire: see section 5

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## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - 177 mg/kg

LC50 Inhalation - Rat - 4 h - > 1,500 mg/m<sup>3</sup>

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

No data available

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes.

(OECD Test Guideline 405)

#### Respiratory or skin sensitisation

Maximisation Test - Guinea pig

May cause allergic skin reaction.

(OECD Test Guideline 406)

#### Germ cell mutagenicity

May alter genetic material. In vivo tests showed mutagenic effects

#### Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Possible human carcinogen

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

NTP: Reasonably anticipated to be a human carcinogen (Acrylamide)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

Animal testing did not show any effects on foetal development.

May cause reproductive disorders. Suspected human reproductive toxicant

**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

**Additional Information**

RTECS: AS3325000

Liver - Irregularities - Based on Human Evidence

Liver - Irregularities - Based on Human Evidence

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**12. ECOLOGICAL INFORMATION****12.1 Toxicity**

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 90 mg/l - 96 h

NOEC - Cyprinus carpio (Carp) - 5 mg/l - 28 d

Toxicity to daphnia and other aquatic invertebrates mortality NOEC - Daphnia magna (Water flea) - 60 mg/l - 48 h

EC50 - Daphnia magna (Water flea) - 160 mg/l - 48 h

**12.2 Persistence and degradability**

Biodegradability Result: 100 % - Readily biodegradable (OECD Test Guideline 301D)

**12.3 Bioaccumulative potential**

Bioaccumulation Oncorhynchus mykiss (rainbow trout) - 72 h - 710 µg/l

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 Other adverse effects**

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

No data available

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**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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**14. TRANSPORT INFORMATION****DOT (US)**

Sigma - A3553

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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**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**

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

**Pennsylvania Right To Know Components**

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

**New Jersey Right To Know Components**

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

**California Prop. 65 Components**

WARNING! This product contains a chemical known to the State of California to cause cancer.

	CAS-No.	Revision Date
Acrylamide	79-06-1	2007-09-28

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

	CAS-No.	Revision Date
Acrylamide	79-06-1	2007-09-28

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**16. OTHER INFORMATION**

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

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H301	Toxic if swallowed.
H312	Harmful in contact with skin.



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.
H332	Harmful if inhaled.
H340	May cause genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.

**HMIS Rating**

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	1
Physical Hazard	0

**NFPA Rating**

Health hazard:	2
Fire Hazard:	1
Reactivity Hazard:	0

**Further information**

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**Preparation Information**

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Product Safety – Americas Region  
1-800-521-8956

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