

Material Safety Data Sheet

Version 4.3

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Acrylamide

Product Number : A3553

Brand : Sigma

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832

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Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Carcinogen, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Skin sensitiser, Irritant, Teratogen, Reproductive hazard, Mutagen

Target Organs

Nerves., Kidney

GHS Classification

Acute toxicity, Oral (Category 3)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 3)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Skin sensitization (Category 1)
Germ cell mutagenicity (Category 1B)
Carcinogenicity (Category 1B)
Reproductive toxicity (Category 2)
Acute aquatic toxicity (Category 3)

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H301 + H311

Toxic if swallowed or in contact with skin

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.
H402 Harmful to aquatic life.

Precautionary statement(s)

P201 Obtain special instructions before use.
P280 Wear protective gloves/ protective clothing.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
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.

HMIS Classification

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

NFPA Rating

Health hazard: 2
Fire: 1
Reactivity Hazard: 0

Potential Health Effects

Inhalation Toxic if inhaled. Causes respiratory tract irritation.
Skin Toxic if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Toxic if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Acrylic acid amide
2-Propenamide

Formula : C₃H₅NO
Molecular Weight : 71.08 g/mol

Component		Concentration
Acrylamide		
CAS-No.	79-06-1	-
EC-No.	201-173-7	
Index-No.	616-003-00-0	
Registration number	01-2119463260-48-XXXX	

4. 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.

5. FIREFIGHTING MEASURES

Conditions of flammability

Not flammable or combustible.

Suitable extinguishing media

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

Special protective equipment for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products

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

6. ACCIDENTAL RELEASE MEASURES**Personal precautions**

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

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.

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.

7. HANDLING AND STORAGE**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Light sensitive. Keep in a dry place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Basis
Acrylamide	79-06-1	TWA	0.3 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
Remarks	Skin designation			
		TWA	0.03 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
	Skin notation			
		TWA	0.03 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Central Nervous System impairment Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption			
		TWA	0.03 mg/m3	USA. NIOSH Recommended Exposure Limits
	Potential Occupational Carcinogen See Appendix A Potential for dermal absorption			
		TWA	0.03 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Central Nervous System impairment Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption			

Personal protective equipment

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).

Hand 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.

Eye 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 and 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.

Hygiene measures

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	powder
Colour	no data available

Safety data

pH	5.2 - 6 at 500 g/l
Melting point/freezing point	Melting point/range: 82 - 86 °C (180 - 187 °F) - lit.
Boiling point	125 °C (257 °F) at 33 hPa (25 mmHg) - lit.
Flash point	138 °C (280 °F) - closed cup
Ignition temperature	424 °C (795 °F)
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	2.1 hPa (1.6 mmHg) at 84.50 °C (184.10 °F) 0.04 hPa (0.03 mmHg) at 40 °C (104 °F) 0.0900 hPa (0.0675 mmHg) at 25 °C (77 °F)
Density	no data available
Water solubility	200 g/l at 20 °C (68 °F)
Partition coefficient: n-octanol/water	log Pow: -0.67
Relative vapour density	2.45 - (Air = 1.0)
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

no data available

Conditions to avoid

no data available

Materials to avoid

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

Hazardous decomposition products

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

Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Oral LD50**

LD50 Oral - rat - 124 mg/kg

Inhalation LC50

LC50 Inhalation - rat - 4 h - > 1,500 mg/m³

Dermal LD50

LD50 Dermal - rat - 400 mg/kg

Remarks: Blood:Other changes. Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels: Transaminases. Biochemical:Enzyme inhibition, induction, or change in blood or tissue levels: Peptidases.

Other information on acute toxicity

no data available

Skin corrosion/irritation

Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/eye irritation

Eyes - rabbit - Eye irritation - 24 h

Respiratory or skin sensitization

May cause allergic skin reaction.

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

May cause reproductive disorders.

Teratogenicity

Suspected human reproductive toxicant

Specific target organ toxicity - single exposure (Globally Harmonized System)

no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)

no data available

Aspiration hazard

no data available

Potential health effects**Inhalation**

Toxic if inhaled. Causes respiratory tract irritation.

Ingestion

Toxic if swallowed.

Skin

Toxic if absorbed through skin. Causes skin irritation.

Eyes

Causes eye irritation.

Synergistic effects

no data available

Additional Information

RTECS: AS3325000

12. ECOLOGICAL INFORMATION**Toxicity****Toxicity to fish**

mortality NOEC - *Lepomis macrochirus* - 35 mg/l - 96 h

LC50 - *Pimephales promelas* (fathead minnow) - 90 mg/l - 96 h

**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

Persistence and degradability**Bioaccumulative potential****Bioaccumulation**

Oncorhynchus mykiss (rainbow trout) - 72 h

Bioconcentration factor (BCF): 1.65

Mobility in soil

no data available

PBT and vPvB assessment

no data available

Other adverse effects

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

Harmful to aquatic life.

no data available

13. DISPOSAL CONSIDERATIONS**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.

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

UN number: 2074 Class: 6.1

Packing group: III

Proper shipping name: Acrylamide, solid

Reportable Quantity (RQ): 5000 lbs

Marine pollutant: No

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
Marine pollutant: No

IATA

UN number: 2074 Class: 6.1 Packing group: III
Proper shipping name: Acrylamide, solid

15. REGULATORY INFORMATION

OSHA Hazards

Carcinogen, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Toxic by skin absorption, Skin sensitiser, Irritant, Teratogen, Reproductive hazard, Mutagen

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	2007-07-01

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	2007-07-01

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Acrylamide	79-06-1	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Acrylamide	79-06-1	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Acrylamide	79-06-1	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer.	79-06-1	2007-09-28
Acrylamide		

16. OTHER INFORMATION

Further information

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