

Material Safety Data Sheet

Acrylamide Solution, 40%

ACC# 90743

Section 1 - Chemical Product and Company Identification

MSDS Name: Acrylamide Solution, 40%

Catalog Numbers: BP1402-1

Synonyms: Acrylic amide; Ethylenecarboxamide; 2-Propenamamide.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7732-18-5	Water	60	231-791-2
79-06-1	Acrylamide	40	201-173-7

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: colorless liquid.

Warning! Acrylamide may cause nervous system damage. Acrylamide caused cancer and male reproductive disorders in laboratory animal tests. Acrylamide may polymerize explosively if heated to 183°F (84°C). Acrylamide may form explosive dust-air mixtures. Harmful if swallowed, inhaled, or absorbed through the skin. Causes eye irritation. May cause allergic skin reaction. Cancer suspect agent. Light sensitive. Air sensitive. Hygroscopic (absorbs moisture from the air). Keep refrigerated. (Store below 4°C/39°F.)

Target Organs: Eyes, nervous system, reproductive system, skin.

Potential Health Effects

Eye: Causes eye irritation. Acrylamide can be absorbed through the eyes and overexposure will produce the signs and symptoms of neurotoxicity described below.

Skin: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Acrylamide is readily absorbed through unbroken skin and can cause nervous system effects (neurotoxicity). These effects can result from a single overexposure but are more likely after repeated exposures to small amounts over a period of days or weeks. Signs and symptoms of overexposure include increased sweating of the hands and feet, numbness, tingling and weakness in the extremities, unsteady gait and decreased reflexes. If the exposure route is dermal, the symptoms may be preceded by peeling and redness of the skin at the areas of

exposure, normally the hands and feet.

Ingestion: Harmful if swallowed. May cause central, peripheral, and autonomic nervous system effects. Central nervous system effects, which appear to predominate in acute cases, are characterized by abnormal fatigue, memory difficulties, and dizziness. Peripheral neuropathy symptoms, which are more common with repeated low-dose exposure or following a latency period of up to several weeks after acute exposure can include: muscular weakness, paresthesia, numbness in hands, feet, lower legs, and lower arms, unsteadiness, and difficulties in walking and standing. Autonomic nervous system involvement is indicated by excessive sweating, peripheral vasodilation and difficulties in micturation and defecation.

Inhalation: Acrylamide tends to sublime (go directly from solid to vapor form) which may lead to inhalation exposure. Acrylamide can be absorbed through the lungs and overexposure will produce the signs and symptoms of neurotoxicity described above.

Chronic: Prolonged or repeated skin contact may cause dermatitis. May cause cancer according to animal studies. Adverse reproductive effects have been reported in animals. Prolonged or repeated exposure affects the nervous system.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Either acute or chronic exposure may lead to weak or absent reflexes, positive Romberg's sign, loss of vibration and position senses and numbness and tingling of the limbs. An early sign of toxic effects is peeling of the skin of the fingertips.

Antidote: Pyridoxine (vitamin B6), pyruvate, and N-acetylcysteine have been used to reduce the toxicity of acrylamide in experimental studies, but are unproven.

Section 5 - Fire Fighting Measures

General Information: Pyridoxine (vitamin B6), pyruvate, and N-acetylcysteine have been used to reduce the toxicity of acrylamide in experimental studies, but are unproven. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Dust can be an explosion hazard when exposed to heat or flame. Combustible solid. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Not applicable.

Autoignition Temperature: 240 deg C (464.00 deg F)

Explosion Limits, Lower:Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 1; Instability: 2

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal. Avoid generating dusty conditions. Remove all sources of ignition. Isolate area and deny entry. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Keep away from heat, sparks and flame. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Keep away from heat, sparks, and flame. Do not store in direct sunlight. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep refrigerated. (Store below 4°C/39°F.) Keep away from acids. Do not store near alkaline substances. Keep away from polymerization catalysts. Should not be exposed to temperatures above 122°F (50°C).

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Utilize a closed system process where feasible.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Water	none listed	none listed	none listed
Acrylamide	0.03 mg/m ³ TWA (inhalable fraction and vapor); Skin - potential significant contribution to overall exposure by the cutaneous route	0.03 mg/m ³ TWA 60 mg/m ³ IDLH	0.3 mg/m ³ TWA

OSHA Vacated PELs: Water: No OSHA Vacated PELs are listed for this chemical. Acrylamide: 0.03 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: colorless
Odor: Odorless.
pH: 6 - 7
Vapor Pressure: .007 mm Hg @ 25 deg C
Vapor Density: 2.45 (air=1)
Evaporation Rate:Not available.
Viscosity: Not available.
Boiling Point: 125 deg C @ 25 mm Hg
Freezing/Melting Point:83 - 85 deg C (decomposes)
Decomposition Temperature:84 deg C
Solubility: Soluble.
Specific Gravity/Density:1.122 @ 30°C
Molecular Formula:C3H5NO
Molecular Weight:71.08

Section 10 - Stability and Reactivity

Chemical Stability: Stable. However may polymerize explosively if heated to the melting point. May polymerize on exposure to light.

Conditions to Avoid: Light, ignition sources, moisture, exposure to air, heat.

Incompatibilities with Other Materials: Metals, oxidizing agents, reducing agents, acids, bases, peroxides.

Hazardous Decomposition Products: Carbon monoxide, oxides of nitrogen, carbon dioxide, ammonia and/or derivatives, hydrogen gas.

Hazardous Polymerization: May occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 7732-18-5: ZC0110000

CAS# 79-06-1: AS3325000

LD50/LC50:

CAS# 7732-18-5:

Oral, rat: LD50 = >90 mL/kg;

CAS# 79-06-1:

Draize test, rabbit, eye: 100 mg/24H Moderate;

Draize test, rabbit, skin: 50 mg/3D Mild;

Draize test, rabbit, skin: 500 mg/24H Mild;

Oral, mouse: LD50 = 107 mg/kg;

Oral, rabbit: LD50 = 150 mg/kg;

Oral, rat: LD50 = 124 mg/kg;

Skin, rabbit: LD50 = 1680 uL/kg;

Skin, rat: LD50 = 400 mg/kg;

Carcinogenicity:

CAS# 7732-18-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

CAS# 79-06-1:

- **ACGIH:** A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
- **California:** carcinogen, initial date 1/1/90
- **NTP:** Suspect carcinogen
- **IARC:** Group 2A carcinogen

Epidemiology: ACGIH calls acrylamide a confirmed animal carcinogen with unknown relevance to humans. An epidemiological study involving 8854 workers, 2293 exposed to acrylamide, did not show any significant increase in cancer mortality related to acrylamide exposure.

Teratogenicity: See actual entry in RTECS for complete information.

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Mutagenicity: See actual entry in RTECS for complete information.

Neurotoxicity: Neurotoxic effects have occurred in humans.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No information available.

Physical: Log P(oct): -1.24

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series:

CAS# 79-06-1: waste number U007.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ACRYLAMIDE SOLUTION	ACRYLAMIDE SOLUTION
Hazard Class:	6.1	6.1
UN Number:	UN3426	UN3426
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7732-18-5 is listed on the TSCA inventory.

CAS# 79-06-1 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 79-06-1: Effective 10/4/82, Sunset 10/4/92

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 79-06-1: 5000 lb final RQ; 2270 kg final RQ

SARA Section 302 Extremely Hazardous Substances

CAS# 79-06-1: 1000 lb lower threshold TPO; 10000 lb upper threshold TP Q

SARA Codes

CAS # 79-06-1: immediate, delayed, sudden release of pressure, reactive.

Section 313

This material contains Acrylamide (CAS# 79-06-1, 40%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 79-06-1 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

CAS# 79-06-1 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

WARNING: This product contains Acrylamide, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 79-06-1: 0.2 æg/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

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Risk Phrases:

R 20/21 Harmful by inhalation and in contact with skin.

R 25 Toxic if swallowed.

R 36/38 Irritating to eyes and skin.

R 43 May cause sensitization by skin contact.

R 45 May cause cancer.

R 46 May cause heritable genetic damage.

R 48/23/24/25 Toxic : danger of serious damage to health by prolonged exposure through inhalation, contact with skin and if

swallowed.

R 62 Possible risk of impaired fertility.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.

WGK (Water Danger/Protection)

CAS# 7732-18-5: No information available.

CAS# 79-06-1: 3

Canada - DSL/NDSL

CAS# 7732-18-5 is listed on Canada's DSL List.

CAS# 79-06-1 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D1B, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 79-06-1 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
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MSDS Creation Date: 4/17/1998

Revision #9 Date: 8/07/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.