

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

TRADE NAME: Acrylamide

Catalog No.: 161-0100

Chemical identity, Common names: Propenamamide; 2- propenamamide.

Chemical Family: Amide

Formula: CH₂=CHCONH₂

Molecular Weight: 71.06

MANUFACTURER'S NAME:
BIO-RAD LABORATORIES
2000 ALFRED NOBEL DRIVE
HERCULES, CALIFORNIA 94547

EMERGENCY PHONE No:
510/232-7000

DATE PREPARED OR REVISED: March 30, 1993

NAME OF PREPARER: Roy Wood

II. HAZARDOUS INGREDIENTS

This product contains the following toxic chemical subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and of 40 CFR 372:

<u>CHEMICAL NAMES</u>	<u>CAS NUMBERS</u>	<u>PERCENT</u>	<u>EXPOSURE LIMITS IN AIR</u>		
			<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER</u>
Acrylamide	000079-06-1	100.00%	0.03 mg/m ³ (S) (TWA)	0.03mg/m ³ (S) (TWA)	†

TWA=8-hour Time Weighted Average with a skin notation. † LD50:295 oral-rat

III. PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT: 125° C at 25 mm Hg (can sublime)

VAPOR PRESSURE: 1.6 mm Hg at 84.5° C

VAPOR DENSITY(AIR = 1): 2.45 at 175° C

SOLUBILITY IN WATER: 216 g/100 g water at 30° C (86° F)

APPEARANCE AND COLOR: White, crystalline solid, odorless

SPECIFIC GRAVITY(H₂O = 1): 1.122 at 30° C (86° F)

MELTING POINT: 84.0° C (183.2° F)

EVAPORATION RATE (BUTYL ACETATE = 1): N/A

IV. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: N/A

(METHOD USED): N/A

FLAMMABLE LIMITS: N/A

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, or water spray.

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear self-contained breathing apparatus and full protective clothing. Do not use high-pressure water stream. Airborne dust creates an explosion hazard.

UNUSUAL FIRE AND EXPLOSION HAZARDS: May polymerize violently on melting. Dust may be explosive if mixed with air in critical proportions and in the presence of a source of ignition. The hazard is similar to that of any organic solid, including saw dust. Maintain normal good housekeeping for control of dust.

V. HEALTH HAZARD INFORMATION

SYMPTOMS OF OVEREXPOSURE (for each potential route of exposure):

INHALED: Readily absorbed during inhalation exposure to airborne material. May cause drowsiness, tingling sensations, fatigue, weakness, stumbling, slurred speech, and shaking. May cause central and peripheral nervous system damage.

CONTACT WITH SKIN OR EYES: Can produce conjunctival eye irritation and can lead to systemic exposure if contact is prolonged and/or repeated. May cause peeling and redness of skin.

ABSORBED THROUGH SKIN: Readily absorbed through unbroken skin. Signs and symptoms as in "SWALLOWED" but preceded by peeling and redness of skin of fingers and hands.

SWALLOWED: Neurotoxicity can result after a single ingestion but is more likely to occur after ingestion of small amounts over a period of several days or weeks. Signs and symptoms include increased sweating of hands and feet, numbness, tingling and weakness in extremities, unsteady gait, an decreased reflexes.

HEALTH EFFECTS OR RISKS FROM EXPOSURE

ACUTE: Increased sweating of hands and feet, numbness, drowsiness, tingling and weakness in extremities, unsteady gait, and decreased reflexes.

CHRONIC: Suspected Human Carcinogen (ACGIH). Repeated skin contact, inhalation, or swallowing may cause nervous system disturbances. An early sign of overexposure is peeling of the skin of the fingertips. Patients should be monitored for at least 2-3 weeks and observed for signs of delayed neurotoxicity.

Acute and 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.

FIRST AID: EMERGENCY PROCEDURES

EYE CONTACT: Flush eyes with large amounts of water for at least 15 minutes, lifting upper and lower eyelids occasionally. If irritation persists, get medical attention.

SKIN CONTACT: Flush skin with large amounts of water for at least 15 minutes, while removing contaminated clothing and shoes. Wash clothes before reuse. Get medical attention.

INHALED: Remove to fresh air at once. If not breathing, give artificial respiration. Get medical attention if signs or symptoms of intoxication exist.

SWALLOWED: If conscious, for large single ingestion, induce vomiting by giving syrup of ipecac, 30 ml, followed by two glasses of water. If ipecac is not available, touch back of throat with spoon or finger. Never give anything by mouth to unconscious or convulsing person. Get medical attention immediately.

SUSPECTED CANCER AGENT

NO: THIS PRODUCTS INGREDIENTS ARE NOT FOUND IN THE LISTS BELOW. (See "chronic" page 1)

YES: FEDERAL OSHA NTP IARC

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Persons with preexisting skin disorders, eye problems, or central or peripheral nervous system conditions may be more susceptible to the effects of this substance.

VI. REACTIVITY DATA

STABLE: **UNSTABLE**

CONDITIONS TO AVOID: Avoid temperatures above 120° F.

INCOMPATIBILITY(Materials to avoid): Oxidizing agents, reducing agents, acids, bases, and vinyl polymerization initiators. Also iron, copper, aluminum, brass, and bronze.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may produce carbon monoxide and/or carbon dioxide, ammonia, and NO_x (nitrogen oxides)

HAZARDOUS POLYMERIZATION MAY OCCUR **WILL NOT OCCUR**

CONDITIONS TO AVOID: Avoid temperatures above 120° F.

VII. SPILL, LEAK, AND DISPOSAL PROCEDURES

SPILL RESPONSE PROCEDURES: Spills of acrylamide must be promptly removed. To handle small laboratory spills, wear appropriate protective equipment and clothing, as detailed in Section VIII, during clean up procedures. Sweep up solid spills and place in a covered waste disposal container. Cover a liquid spill with an absorbent material, pick up and place in a suitable container for reclamation or disposal.

PREPARING WASTES FOR DISPOSAL: To dispose of small laboratory amounts of acrylamide, polymerize the acrylamide to polyacrylamide gel in the following manner: Carefully make 100 ml of a 10-20 w/v % acrylamide solution in water and place it in a plastic bag that lines a 250-500 cc beaker. Add 500 uL 10% ammonium persulfate and 100 uL TEMED, stir, and allow to polymerize for 1 hr. Comply with all applicable local, state, and federal regulations on spill reporting, waste handling, and waste disposal.

VIII. SPECIAL HANDLING INFORMATION

VENTILATION AND ENGINEERING CONTROLS: A closed system should be employed. Where this is not possible utilize enclosures and local exhaust ventilation to prevent and/or control skin contact, dust generation, and vapor release. After acrylamide is in solution, exposure to liquid and mist must be controlled.

RESPIRATORY CONTROLS: NIOSH does not approve a cartridge for use with acrylamide. However, tests conducted by American Cyanamid show that organic vapor cartridges provide protection up to 10x the permissible exposure level.

EYE PROTECTION: Chemical safety goggles and/or full face shield and head covering should be worn as necessary to prevent eye and scalp contact. Maintain eye wash fountain and quick-drench facilities in work area.

GLOVES: Wear clean impervious rubber or plastic gloves.

OTHER CLOTHING AND EQUIPMENT: Rubber shoes and long sleeved coveralls or suitable lab coat should be provided daily.

WORK PRACTICES, HYGIENIC PRACTICES: Do not carry or consume food, gum, tobacco products, or drinks in the work area. Wash hands thoroughly after using and before eating or smoking. Wear clean work clothing daily. Showering and clothing change before leaving the plant is mandatory. Work clothing and shoes must not be taken home.

OTHER HANDLING AND STORAGE REQUIREMENTS: Keep in tightly sealed container. Store in a cool, dry, well-ventilated place away from incompatible materials.

PROTECTIVE MEASURES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Wear protective clothing and appropriate respiratory protection. Do not cut, grind, weld, or drill on or near container.

We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and conditions of use of the product are not within the control of Bio-Rad, it is the user's responsibility to handle the product under conditions of safe use.