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**MSDS****Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.  
222 Red School Lane  
Phillipsburg, NJ 08865

**MALLINCKRODT**

24 Hour Emergency Telephone: 908-859-2151  
CHEMTREC: 1-800-424-9300

National Response in Canada  
CANUTEC: 613-996-6666

Outside U.S. and Canada  
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

**ACRYLAMIDE**

MSDS Number: A1550 --- Effective Date: 03/01/00

**1. Product Identification**

Synonyms: 2-Propenamide; ethylene carboxamide; acrylic amide; vinyl amide  
CAS No.: 79-06-1  
Molecular Weight: 71.09  
Chemical Formula: CH<sub>2</sub>CHCONH<sub>2</sub>  
Product Codes:  
J.T. Baker: 4080, 4081, 5530  
Mallinckrodt: 0058, 7717

**2. Composition/Information on Ingredients**

Ingredient	CAS No	Percent	Hazardous
Acrylamide	79-06-1	100%	Yes

**3. Hazards Identification****Emergency Overview**

**WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. AFFECTS CENTRAL AND PERIPHERAL NERVOUS SYSTEMS AND REPRODUCTIVE SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. SUSPECT CANCER HAZARD. MAY CAUSE CANCER. Risk of cancer depends on level and duration of exposure. POSSIBLE BIRTH DEFECT HAZARD. MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA. THERMALLY UNSTABLE. MAY POLYMERIZE EXPLOSIVELY IF HEATED TO THE MELTING POINT.**

**J.T. Baker SAF-T-DATA<sup>(tm)</sup> Ratings (Provided here for your convenience)**

Health Rating: 3 - Severe (Cancer Causing)  
Flammability Rating: 1 - Slight  
Reactivity Rating: 3 - Severe (Explosive)  
Contact Rating: 3 - Severe (Life)  
Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES  
Storage Color Code: Yellow Stripe (Store Separately)

**Potential Health Effects**

Acrylamide is a suspected human carcinogen, severe neurotoxin, and causes irritation of the eyes, skin (is readily absorbed), and respiratory tract.

**Inhalation:**

May cause drowsiness, tingling sensations, fatigue, weakness, stumbling, slurred speech, and shaking. May cause central and peripheral nervous system damage. Severe intoxications may cause permanent nerve damage. Causes irritation to the respiratory tract. May affect reproductive system and act as a teratogen.

**Ingestion:**

Toxic! May cause systemic poisoning with symptoms paralleling those of inhalation.

**Skin Contact:**

May cause irritation and redness. Can be absorbed through the skin causing systemic poisoning; symptoms may parallel inhalation.



Solutions may cause irritation.

**Chronic Exposure:**

Prolonged or repeated exposure through any route may cause muscular weakness, incoordination, skin rashes, excessive sweating of hands and feet, cold hands, peeling of the skin, numbness, abnormal skin or muscle sensations, fatigue, and cause central and peripheral nervous system damage. Suspect cancer hazard. May cause cancer. May affect the reproductive system and act as a teratogen.

**Aggravation of Pre-existing Conditions:**

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

## 4. First Aid Measures

Because of the toxic and highly absorptive nature of acrylamide, quickly providing first aid helps to minimize health effects.

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

**Ingestion:**

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.

**Skin Contact:**

Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

## 5. Fire Fighting Measures

**Fire:**

Flash point: 138C (280F) CC

Autoignition temperature: 240C (464F)

Combustible solid.

**Explosion:**

Not considered an explosive hazard, but an explosion may occur upon polymerization. Polymerization may be caused by exposure to heat, U.V. light, oxidizers, or peroxides.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

## 6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

## 7. Handling and Storage

Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Store separately from reactive or combustible materials, and out of direct sunlight. Isolate from oxidizing materials and peroxides. Store away from acids and alkalis. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

## 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:**

Acrylamide:

-OSHA Permissible Exposure Limit (PEL):

0.3 mg/m3 (TWA) (skin)

-ACGIH Threshold Limit Value (TLV):

0.03 mg/m3 (TWA) (skin)

Listed as A3, animal carcinogen

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and high efficiency dust/mist filter may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and high efficiency dust/mist filter may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. For emergencies or instances where the exposure



levels are not known, use a full-face piece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. This compound possibly exists in both particulate and vapor phase. A gas/vapor cartridge should be used in addition to the particulate filter. If the vapor concentration alone exceeds the exposure limits, use a supplied air respirator, because warning properties are unknown for these compounds.

**Skin Protection:**

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure.

**Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

**Other Control Measures:**

Comments: Stress good personal cleanliness and housekeeping to prevent skin contact. Wear clean work clothing daily. Do not home launder. If clothes become contaminated, remove at once, wash the skin with soap and water and launder clothing before reuse. Destroy contaminated leather goods.

## 9. Physical and Chemical Properties

**Appearance:**

Colorless crystals.

**Odor:**

Odorless.

**Solubility:**

216 g/100 g water @ 30C (86F)

**Specific Gravity:**

1.1222 @ 30C/4C

**pH:**

No information found.

% Volatiles by volume @ 21C (70F):

0

**Boiling Point:**

125C (257F)

**Melting Point:**

84.5C (183F)

**Vapor Density (Air=1):**

2.4 @ 175C

**Vapor Pressure (mm Hg):**

0.007 @ 20C (68F)

**Evaporation Rate (BuAc=1):**

No information found.

## 10. Stability and Reactivity

**Stability:**

May polymerize explosively. Thermally unstable. Polymerization may be caused by exposure to heat, U.V. light, oxidizers, or peroxides. May be stabilized with hydroquinone, t-butylpyrocatechol, N-phenyl-2-naphthylamine, or other antioxidants.

**Hazardous Decomposition Products:**

Burning may produce ammonia, carbon monoxide, carbon dioxide, nitrogen oxides. Hydrogen gas.

**Hazardous Polymerization:**

Acrylamide readily polymerizes on exposure to heat, U.V. light, oxidizers, or peroxides.

**Incompatibilities:**

Acids, oxidizing agents, and bases. Spontaneously reacts with hydroxyl-, amino-, and sulfhydryl- containing compounds.

**Conditions to Avoid:**

Heat, shock, UV light, ignition sources, and incompatibles.

## 11. Toxicological Information

For Acrylamide: oral rat LD50: 124 mg/kg; skin rabbit LD50: 1680 uL/kg; investigated as a tumorigen, mutagen, reproductive effector.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Acrylamide (79-06-1)	No	Yes	2A

## 12. Ecological Information

**Environmental Fate:**

When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material may biodegrade to a moderate extent. This material is not expected to significantly bioaccumulate. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition.

**Environmental Toxicity:**

This material is not expected to be toxic to aquatic life. The LC50/96-hour values for fish are over 100 mg/l.

### 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

### 14. Transport Information

#### Domestic (Land, D.O.T.)

Proper Shipping Name: ACRYLAMIDE  
Hazard Class: 6.1  
UN/NA: UN2074  
Packing Group: III  
Information reported for product/size: 12KG

#### International (Water, I.M.O.)

Proper Shipping Name: ACRYLAMIDE, SOLID  
Hazard Class: 6.1  
UN/NA: UN2074  
Packing Group: III  
Information reported for product/size: 12KG

#### International (Air, I.C.A.O.)

Proper Shipping Name: ACRYLAMIDE  
Hazard Class: 6.1  
UN/NA: UN2074  
Packing Group: III  
Information reported for product/size: 12KG

### 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Acrylamide (79-06-1)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	DSL	NDSL	Phil.
Acrylamide (79-06-1)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-SARA 313-	
	RQ	TPQ	List	Chemical Catg.
Acrylamide (79-06-1)	5000	1,000*	Yes	No

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA-	-TSCA-
		261.33	8(d)
Acrylamide (79-06-1)	5000	U007	No

Chemical Weapons Convention: No TSCA 12(b): No CDIA: No  
SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No  
Reactivity: Yes (Pure / Solid)

#### WARNING:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

#### Australian Hazchem Code: 2PE

Poison Schedule: No information found.

#### WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

### 16. Other Information

NFPA Ratings: Health: 2 Flammability: 2 Reactivity: 2

#### Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. AFFECTS CENTRAL AND PERIPHERAL NERVOUS SYSTEMS AND REPRODUCTIVE SYSTEM. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. SUSPECT CANCER



ACRYLAMIDE

HAZARD. MAY CAUSE CANCER. Risk of cancer depends on level and duration of exposure. POSSIBLE BIRTH DEFECT HAZARD. MAY CAUSE BIRTH DEFECTS BASED ON ANIMAL DATA. THERMALLY UNSTABLE. MAY POLYMERIZE EXPLOSIVELY IF HEATED TO THE MELTING POINT.

**Label Precautions:**

Do not breathe dust.  
Do not get in eyes, on skin, or on clothing.  
Keep container closed.  
Use only with adequate ventilation.  
Wash thoroughly after handling.  
Keep away from heat, sparks and flame.  
Protect from U.V. light, oxidizers and peroxides.

**Label First Aid:**

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

MSDS Section(s) changed since last revision of document include: 14, 16.

**Disclaimer:**

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