

# MATERIAL SAFETY DATA SHEET — Acrylamide

## SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier <b>Acrylamide 50</b>		[WHMIS Classification]	
Product Use			
Manufacturer's Name		Supplier's Name <b>Ayers International Corp.</b>	
Street Address		Street Address <b>P.O. Box 4312</b>	
City	State	City <b>Greenwich</b>	State <b>CT</b>
Postal Code	Emergency Telephone	Postal Code <b>06831</b>	Emergency Telephone <b>(800) 424 - 9300</b>
Date MSDS Prepared <b>07/28/10</b>	MSDS Prepared By <b>J. Miller</b>	Phone Number <b>(203) 329 - 8919</b>	

## SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	%	CAS Number	LD <sub>50</sub> of Ingredient (specify species and route)	LC <sub>50</sub> of Ingredient (specify species)
<b>Acrylamide</b>		<b>79-06-1</b>		
Hazardous Ingredients (specific)				

## SECTION 3 — HAZARDS IDENTIFICATION

Route of Entry  Skin Contact  Skin Absorption  Eye Contact  Inhalation  Ingestion

WHMIS Symbols]

Potential Health Effects

**May cause cancer. Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Toxic in contact with skin and if swallowed. May cause heritable genetic damage.**

**Skin Contact:** Short single exposure not likely to cause skin irritation. Repeated exposure may cause skin irritation. A single, prolonged exposure may result in the material being absorbed in harmful amounts. A sign of excessive skin exposure if the peeling of skin. Excessive exposure may cause neurological signs and symptoms such as injury to nerves of the extremities. May cause allergic skin reaction.

**Eye Contact:** May cause slight eye irritation. May cause slight corneal injury.

**Inhalation:** A single, brief (minutes) inhalation exposure is not likely to cause adverse effects.

**Ingestion:** Single oral dose is considered moderately toxic. Small amounts swallowed incidental to normal handling operations may cause serious injury; swallowing larger amounts may cause death.

**Systemic Toxicity:** Repeated exposures to small amounts may cause peripheral nervous system effects including fatigue, muscular weakness, numbness and parasthesia of hands and feet, difficulties of co-ordination, and sensory impairment. Recovery may be very slow.

**Cancer Information:** Has been shown to cause cancer in laboratory animals. Acrylamide is listed as a potential carcinogen by OSHA, IARC and NTP. Epidemiology studies on workers involved with acrylamide monomer and polymerization operations have not shown any evidence for carcinogenicity to humans.

**Teratology (birth defects):** Birth defects are unlikely. Exposures having no effect on the mother should have no effect on the fetus. Did not cause birth defects in animals: other effects were seen in the fetus only at doses which caused toxic effects to the mother. Repeated excessive exposures to high amounts may cause effects on testes and male reproduction.

## SECTION 4 — FIRST AID MEASURES

**Skin Contact:** Wash off immediately with plenty of water for at least 15 minutes. Immediately remove all contaminated clothing. In case of persistent skin irritation, consult a physician.

**Eye Contact:** In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

**Inhalation:** Move to fresh air in case of accidental inhalation of vapors. At coughing, difficult breathing or other symptoms of poisoning, immediately administer oxygen and call a physician, even if symptoms occur within some hours. Never give anything by mouth to an unconscious person.

**Ingestion:** If victim is conscious, induce vomiting immediately and call a physician. Never give anything by mouth to an unconscious person.

## SECTION 5 — FIRE FIGHTING MEASURES

Flammable <input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, under which conditions?	
<b>Means of Extinction:</b> This product does not burn in aqueous solution. Under fire conditions: water spray, carbon dioxide (CO <sub>2</sub> ), alcohol resistant foam, dry powder, dry powder.		
Flashpoint (° C) and Method	Upper Flammable Limit (% by volume)	Lower Flammable Limit (% by volume)
Autoignition Temperature (°C)	Explosion Data — Sensitivity to Impact	Explosion Data — Sensitivity to Static Discharge
Special Fire-fighting Precautions Hazardous decomposition products: ammonia. Polymerization can occur.		
[Protective Equipment for Firefighters] Wear self-contained breathing apparatus and protective suit.		

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## SECTION 6 — ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures
<b>Personal Precautions:</b> Avoid all contact with the product by ingestion, inhalation or contact with the skin, eyes and clothing. Large amounts: keep people away from and upwind of spill/leak. Wear personal protective equipment.
<b>Environmental Precautions:</b> Do not allow material to contaminate surface or ground water. Prevent product from entering drains.
<b>Methods for Cleaning Up:</b> Small amounts: soak up with inert absorbent material and collect in a waste container for disposal. Large amounts: do not allow to dry. Dam up. Take up mechanically and collect in suitable container for disposal. The reactivity can be reduced by diluting 1/1 (volume) with water. Clean contaminated surface thoroughly with large amounts of water.

## SECTION 7 — HANDLING AND STORAGE

Handling Procedures and Equipment

During handling operations: Avoid all contact with the product by ingestion, inhalation or contact with the skin, eyes and clothing.

Do not allow to crystallize. Keep at temperatures between 15 and 38 degrees Celsius. To prevent loss of dissolved oxygen, do not heat, do not use an inert blanket, and do not sparge with an inert gas.

## SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

<b>Exposure Limits</b>	<b>ACGIH:</b> .03 mg/m <sup>3</sup>	<b>OSHA:</b> .3 mg/m <sup>3</sup> (Skin)	<input type="checkbox"/> Other (specify)
Specific Engineering Controls (such as ventilation, enclosed process)			
Provide good general and/or local exhaust ventilation to ensure that airborne concentrations remain below the maximum exposure limits.			
Personal Protective Equipment	<input checked="" type="checkbox"/> Gloves	<input checked="" type="checkbox"/> Respirator	<input checked="" type="checkbox"/> Eye
		<input checked="" type="checkbox"/> Footwear	<input checked="" type="checkbox"/> Clothing
			<input checked="" type="checkbox"/> Other

If checked, please specify type

**Respiratory Protection:** In case of insufficient ventilation wear suitable respiratory equipment: organic vapor cartridges provide protection from airborne levels up to 2.5 mg/m<sup>3</sup>. The cartridges must be changed at the beginning of each shift. Full facepiece, positive pressure, supplied air respirators or self-contained breathing apparatus must be used for higher or for unknown concentrations or where handling conditions make it desirable. Note that acrylamide exhibits no warning properties at concentrations at or below the permissible exposure level.

**Hand Protection:** Impervious gloves in: polyethylene, butyl rubber, nitrile/butadiene rubber, neoprene. Before removing gloves clean them with soap and water. Discard gloves which are contaminated on the inside.

**Eye Protection:** Protect eyes and face. Wear chemical splash proof goggles or face-shield. Wear a head covering which totally protects the head and neck. Provide eyewash fountain in close proximity to points of potential exposure.

**Skin Protection:** Wear complete suit protecting against chemicals. Clean suit must be provided daily. Wear butyl/nitrile or neoprene shoes. Remove and wash contaminated clothing before re-use. Provide safety shower in close proximity to points of potential exposure.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety practice. Food, beverages and tobacco products should not be carried, stored or consumed where this chemical is in use. Shower or bathe at the end of workshift. Store street clothes separately from work clothing and protective equipment. Launder work clothing at end of workshift prior to reuse. Work clothing and shoes must not be taken home.

## SECTION 9 — PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid	Odor and Appearance Colorless, Odorless	Odor Threshold (ppm)
Specific Gravity	Vapor Density (air = 1)	Vapor Pressure (mmHg) 15.2 (@20°C)
Evaporation Rate	Boiling Point (° C) 99-104	Freezing Point (° C) 14-17
pH 6.0-8.0	Coefficient of Water/Oil Distribution	[Solubility in Water] Soluble

## SECTION 10 — STABILITY AND REACTIVITY

Chemical Stability	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If no, under which conditions? Hazardous polymerization may occur.
Incompatibility with Other Substances	<input type="checkbox"/> Yes <input type="checkbox"/> No	If yes, which ones?

**Conditions to Avoid:** Avoid temperatures above 38 degrees Celsius and below freezing point (crystallization). Acids, reducing agents, oxidizing agents, initiators.

**Hazardous Decomposition Products:** Thermal decomposition may produce: ammonia carbon oxides (COx), nitrogen oxides (NOx).

## SECTION 11 — TOXICOLOGICAL INFORMATION

### Effects of Acute Exposure

**Oral:** LD50/oral/rat = 490 (female) & 565 mg/kg (male). Small quantities ingested accidentally during normal industrial handling may have serious health effects. Ingestion of large quantities may result in death.

**Dermal:** LD50/rabbit = 2250 mg/kg. A single prolonged exposure may cause absorption through the skin of harmful quantities of the material. Over-exposure will produce signs and symptoms of neurotoxicity and may induce peripheral neuropathy (lesions of the nerves of the extremities).

**Inhalation:** A brief single inhalation (of a few minutes) of airborne acrylamide should not induce undesirable effects.

### Irritancy of Product

**Skin sensitization:** Over-exposure may cause defatting and peeling of the skin. A single, short exposure should not produce significant dermal irritation. Repeated or prolonged exposure may cause slight irritation of the skin.

**Eyes:** Repeated or prolonged exposure may cause slight irritation of the eyes and slight corneal lesions.

**Other Information:** Danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Harmful in contact with skin and if swallowed. May cause heritable genetic damage. Not mutagenic in AMES Test. May cause cancer. Repeated excessive exposures to high amounts may cause effects on testes and male reproduction.

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## SECTION 12 — ECOLOGICAL INFORMATION

**Ecotoxicity:** LD50/Cerio Daphnia/48h = 160mg/l  
**Bioaccumulation:** Partition coefficient (n-octanol/water) log Pow = .67  
**Persistence/degradability:** Assessment of biological degradability (closed-bottle test): > 60% after 28 days.

## SECTION 13 — DISPOSAL CONSIDERATIONS

Waste Disposal

**Waste from residues/unused products:** In accordance with local and national regulations. Dispose of in a biological treatment plant. It may be necessary, however, to monitor the NOx emissions in order to comply with environmental regulations.

**Contaminated Packaging:** In accordance with local and national regulations.

## SECTION 14 — TRANSPORT INFORMATION

Special Shipping Information

[CANADA]	Proper Shipping Name: Acrylamide Solution Hazard Class: 6.1 / Packing Group: III UN-No: 3426 / Transport Label: Toxic / Marine Pollutant: N	PIN
[ADR/RID]	Proper Shipping Name: Acrylamide Solution Hazard Class: 6.1-12c / Packing Group: III UN-No: 3426 / TREM-CARD: 6.1	[DOT] Proper Shipping Name: Acrylamide Solution Hazard Class: Division 6.1 / Packing Group: III UN-No: 3426
[IMO]	Proper Shipping Name: Acrylamide Solution Hazard Class: 6.1 / Packing Group: III UN-No: 3426 / IMDG Page: 184	[CAO] Proper Shipping Name: Acrylamide Solution Hazard Class: 6.1 / Packing Group: III UN-No: 3426 / Transport Label: Toxic

## SECTION 15 — REGULATORY INFORMATION

All components of this product are on the TSCA and DSL inventories.

**RCRA Status:** Hazardous waste, if discarded

**Hazardous waste number:** U007

**Reportable Quantity (40 CFR 302):** 5000 lbs

**Threshold Planning Quantity(40 CFR 355):** 1000 lbs

**California Proposition 65 Information:** *The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986:* This product contains a chemical(s) known to the state of California to cause cancer: Acrylamide

**HMIS & NFPA Ratings:**

	HMIS	NFPA
Health	2	2
Flammability	1	1
Reactivity	2	2
Personal Protection/Special	H	

## SECTION 16 — OTHER INFORMATION

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process unless specified in the text.

