SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Acrylamide 50

[WHMIS Classification]

Product Use
Supplier’s Name
Ayers International Corp.

Manufacturer’s Name
P.O. Box 4312

Street Address
Street Address
Greenwich CT

City State
Postal Code Emergency Telephone
06831 (800) 424 - 9300

Date MSDS Prepared
07/28/10 MSDS Prepared By J. Miller Phone Number (203) 329 - 8919

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients % CAS Number LD₅₀ of Ingredient (specify species and route) LC₅₀ of Ingredient (specify species)
Acrylamide 79-06-1

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 paraesthesia 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.
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

<table>
<thead>
<tr>
<th>Flammable</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>If yes, under which conditions?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Means of Extinguishment:** This product does not burn in aqueous solution. Under fire conditions: water spray, carbon dioxide (CO2), alcohol resistant foam, dry powder, dry powder.

<table>
<thead>
<tr>
<th>Flashpoint (°C) and Method</th>
<th>Upper Flammable Limit (% by volume)</th>
<th>Lower Flammable Limit (% by volume)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Autoignition Temperature (°C)</th>
<th>Explosion Data — Sensitivity to Impact</th>
<th>Explosion Data — Sensitivity to Static Discharge</th>
</tr>
</thead>
</table>

**Special Fire-fighting Precautions**

Hazardous decomposition products: ammonia. Polymerization can occur.

<table>
<thead>
<tr>
<th>Protective Equipment for Firefighters</th>
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<tbody>
<tr>
<td>Wear self-contained breathing apparatus and protective suit.</td>
</tr>
</tbody>
</table>

**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.

57M6 (6/99) Please continue on reverse side
SECTION 6 — ACCIDENTAL RELEASE MEASURES

Leak and Spill Procedures

**Personal Precautions:** 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.

**Environmental Precautions:** Do not allow material to contaminate surface or ground water. Prevent product from entering drains.

**Methods for Cleaning Up:** 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

**Exposure Limits**

<table>
<thead>
<tr>
<th>ACGIH</th>
<th>.03 mg/m³</th>
<th>OSHA</th>
<th>.3 mg/m³ (Skin)</th>
<th>Other (specify)</th>
</tr>
</thead>
</table>

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**

☑ Gloves ☑ Respirator ☑ Eye ☑ Footwear ☑ Clothing ☑ 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/m³. 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

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Odor and Appearance</th>
<th>Odor Threshold (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
<td>Colorless, Odorless</td>
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</tbody>
</table>

- **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

**SECTION 10 — STABILITY AND REACTIVITY**

- **Chemical Stability**
  - Yes ☑ No
  - Hazardous polymerization may occur.

- **Incompatibility with Other Substances**
  - Yes ☑ 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 to 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

[ADR/RID] Proper Shipping Name: Acrylamide Solution  
Hazard Class: 6.1-12c / Packing Group: III  
UN-No: 3426 / TREM-CARD: 6.1

[IMC] Proper Shipping Name: Acrylamide Solution  
Hazard Class: 6.1 / Packing Group: III  
UN-No: 3426 / IMDG Page: 184

[DOT] Proper Shipping Name: Acrylamide Solution  
Hazard Class: Division 6.1 / Packing Group: III  
UN-No: 3426

[ICAO] 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:

<table>
<thead>
<tr>
<th></th>
<th>HMIS</th>
<th>NFPA</th>
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<tbody>
<tr>
<td>Health</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Flammability</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Reactivity</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Personal Protection/Special</td>
<td>H</td>
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</tbody>
</table>

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.