MATERIAL SAFETY DATA SHEET — Butyl Acrylate

SECTION 1 — CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Butyl Acrylate

[WHMIS Classification]

Product Use

Manufacturer’s Name: Ayers International Corp.
Supplier’s Name: Ayers International Corp.

Street Address: P.O. Box 4312
Street Address: P.O. Box 4312

City: Greenwich
City: Greenwich

State: New York
State: New York

Postal Code: 06831
Postal Code: 06831

Emergency Telephone: (800) 424-9300
Emergency Telephone: (800) 424-9300

Date MSDS Prepared: 07/01/2010
MSDS Prepared By: J. Miller
Phone Number: (203) 329-8919

SECTION 2 — COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Ingredients (specific)</th>
<th>%</th>
<th>CAS Number</th>
<th>LD₅₀ of Ingredient (specify species and route)</th>
<th>LC₅₀ of Ingredient (specify species)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butyl Acrylate</td>
<td>99</td>
<td>141-32-2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methyl Ether of Hydroquinone</td>
<td>10-20ppm</td>
<td>150-76-5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hazardous Ingredients (specific)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SECTION 3 — HAZARDS IDENTIFICATION

Inhalation: Causes irritation of the respiratory tract, experienced as nasal discomfort and discharge, with chest pain, coughing, headache, nausea, vomiting, dizziness, drowsiness, disturbed vision and unconsciousness.

Eye Contact: Liquid or vapor causes irritation, experienced as stinging, excess blinking and tear production, with excess redness and swelling of the conjunctiva.

Skin Contact: Causes irritation with discomfort, local redness, and possible swelling.

Skin Absorption: Prolonged or widespread contact may result in the absorption of potentially harmful amounts of material.

Swallowing: Slightly toxic. May cause abdominal discomfort, nausea, vomiting and diarrhea. May cause burning or painful sensations in the mouth, throat, chest, and abdomen. Aspiration into the lungs may occur during ingestion or vomiting, resulting in lung injury.

Effects of Repeated Overexposure: Prolonged and repeated overexposure to butyl acrylate vapor may result in damage to the tissues of the nose and upper respiratory tract — an effect typically produced by irritant materials.

Other Effects of Overexposure: Skin contact may cause sensitization and an allergic skin reaction.

Medical Conditions Aggravated by Exposure: Skin contact may aggravate an existing dermatitis. Inhalation of material may aggravate asthma and inflammatory or fibrotic pulmonary disease.

SECTION 4 — FIRST AID MEASURES

Skin Contact: Immediately remove contaminated clothing and shoes. Wash skin with soap and water. Obtain medical attention.

Eye Contact: Immediately flush eyes with water and continue washing for several minutes. Remove contact lenses, if worn. Obtain medical attention.

Inhalation: Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.

Ingestion: If patient is fully conscious, give two glasses of milk or water at once. Do not induce vomiting. Obtain medical attention without delay.

Please continue on reverse side
SECTION 5 — FIRE FIGHTING MEASURES

Flammable: Yes

Means of Extinction: Extinguish fires with water spray or apply alcohol-type or all-purpose-type foam by manufacturer’s recommended techniques for large fires. Use carbon dioxide or dry chemical media for small fires.

Flashpoint (°C) and Method
- Closed Cup – 39°C
- Open Cup – 48°C

Upper Flammable Limit (% by volume): 9.9%

Lower Flammable Limit (% by volume): 1.3%

Autoignition Temperature (°C): No test data available

Explosion Data — Sensitivity to Impact

Explosion Data — Sensitivity to Static Discharge

SECTION 6 — ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled:
Collect for disposal.

Personal Precautions: Wear suitable protective equipment. Avoid contact with liquid and vapors.

Environmental Precautions: Avoid runoff to waterways and sewers.

SECTION 7 — HANDLING AND STORAGE

General Handling: Avoid breathing vapor. Do not get in eyes, on skin, on clothing. Keep away from heat and flame. Do not swallow. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. FOR INDUSTRY USE ONLY.

Ventilation: Butyl acrylate has an unpleasant odor that can be detected at low concentrations in air (~0.006 ppm). General (mechanical) room ventilation should be satisfactory, if this product is confined within closed equipment. Use special, local ventilation at points where vapors are expected to be vented to the workplace air.

Storage Requirements
Material should be kept below 54°C during shipping and short-term storage and below 38°C for extended storage. This product is inhibited with 1 to 120 ppm MEHQ (monomethyl ether of hydroquinone). Check the inhibitor concentration at intervals and add inhibitor as needed. Do not store butyl acrylate under pure nitrogen or sparge it with nitrogen or other oxygen-free gas. Some dissolved oxygen should be present in the liquid for the inhibitor to be effective.

SECTION 8 — EXPOSURE CONTROL / PERSONAL PROTECTION

Exposure Limits

<table>
<thead>
<tr>
<th>Substance</th>
<th>Exposure Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butyl Acrylate</td>
<td>2 ppm TWA8</td>
</tr>
<tr>
<td>Methyl Ether of Hydroquinone</td>
<td>5 mg/m3 TWA8</td>
</tr>
</tbody>
</table>

In the exposure limits chart above, the listed limit includes all airborne forms of the substance that can be inhaled.

Exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

Personal Protective Equipment:
- Gloves
- Respirator
- Eye
- Other

Monogoggles
Chemical Apron
Eye Bath, Safety Shower

Process Hazard: Sudden release of hot organic chemical vapor or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into hot equipment under a vacuum, may result in ignitions without the presence of obvious ignition sources. Published “autoignition” or “ignition” temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated-temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.
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>Appearance: Colorless Odor: Sharp, Fragrant</td>
<td></td>
</tr>
</tbody>
</table>

- Specific Gravity: 0.900 (20°C / 20°C)
- Vapor Density (air = 1): 4.4
- Vapor Pressure (mmHg): 3.3 mmHg (20°C)
- Evaporation Rate: 0.33
- Boiling Point (°C): 149
- Freezing Point (°C): -64
- pH: No test data available.
- Coefficient of Water/Oil Distribution: [Solubility in Water]: 0.1% (20°C)

SECTION 10 — STABILITY AND REACTIVITY

- Chemical Stability: Yes
- If no, under which conditions?
- Incompatibility with Other Substances: Yes
- If yes, which ones?
  - Avoid contact with strong acids, alkalies, oxidizing agents, polymerization initiators, heat, flame, sunlight, x-rays, or ultraviolet radiation.

<table>
<thead>
<tr>
<th>Chemical Stability</th>
<th>Incompatibility with Other Substances:</th>
<th>If no, under which conditions?</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ Yes</td>
<td>✔ Yes</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

**Hazardous Polymerization may occur.**

**Conditions to Avoid:** Avoid storage in a completely inert atmosphere since some oxygen is required to inhibit polymerization. Do not sparge with inert gas, such as pure nitrogen. Do not heat; inhibitor is ineffective at elevated temperatures. Avoid contact with strong alkalies that will extract the inhibitor.

**Inhibitor:** Monomethyl ether of Hydroquinone.

**Storage:** This product is inhibited with 10 to 120 ppm MEHQ. Check the inhibitor concentration at intervals and add inhibitor as needed. Do not store butyl acrylate under pure nitrogen or sparge it with nitrogen or other oxygen-free gas. Some dissolved oxygen should be present in the liquid for the inhibitor to be effective.

SECTION 11 — TOXICOLOGICAL INFORMATION

**Effects of Acute Exposure**

<table>
<thead>
<tr>
<th>Route</th>
<th>Sequence</th>
<th>Results</th>
<th>Gross Pathology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peroral: Rat</td>
<td>LD50 = 3.73 (2.68 – 5.21) g/kg; 20% dispersion in 1% Tergitol 7.</td>
<td>Moderate to severe corneal injury, iritis in 2/5</td>
<td>Liver, kidneys discolored</td>
</tr>
<tr>
<td>Peroral: Rat; LD50 = 2.00 (1.23 – 3.26) ml/kg; 24 h occluded.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inhalation: Vapor Study not fasted rat; 4 hours; LC50=1414 (1032 – 1938) ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Significant Data with Possible Relevance to Humans:** Chronic (lifetime) inhalation exposure of rats to butyl acrylate vapor produced degenerative lesions in the nasal passages and partially reversible corneal opacification.

**Additional Studies:** Prolonged and repeated overexposure to butyl acrylate vapor may result in damage to the tissues of the nose and upper respiratory tract – an effect typically produced by irritant materials. Based upon analogy to methyl acrylate and ethyl acrylate, skin contact with butyl acrylate may cause sensitization and an allergic skin reaction.

**Irritation**

<table>
<thead>
<tr>
<th>Route</th>
<th>Sequence</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>Rabbit; 24 h uncovered</td>
<td>Moderate to marked erythema</td>
</tr>
<tr>
<td>Eye</td>
<td>Rabbit; 0.5 ml</td>
<td>Moderate to severe corneal injury, iritis in 2/5</td>
</tr>
</tbody>
</table>

**Effects of Chronic Exposure**

**Name of synergistic products/effects**

Please continue on reverse side
SECTION 12 — ECOLOGICAL INFORMATION

Toxicity to Fish:
Fathead Minnow; 94h; LC50
Result value: 5.7 mg/l

Further Information
Theoretical Oxygen Demand (THOD) – calculated: 2.25 mg/mg
Octanol/Water Partition Coefficient – Measured: 2.36

BOD (% Oxygen consumption) | Day 5 | Day 10 | Day 15 | Day 20 | Day 28/30
---|---|---|---|---|---
42 % | 50 % | 62 %

SECTION 13 — DISPOSAL CONSIDERATIONS

Do not dump into any sewers, on the ground, or into any body of water. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Ayers International has no control over the management practices or manufacturing processes of parties handling or using this material. This information presented here pertains only to the product as shipped in its intended condition as described in MSDS section 2 (composition / information on ingredients). For unused and uncontaminated product, the preferred options include sending to a licensed, permitted incinerator or other thermal destruction device.

SECTION 14 — TRANSPORT INFORMATION

Special Shipping Information: US D.O.T.

Non-Bulk
Proper Shipping Name: Not Regulated

Bulk
Proper Shipping Name: Butyl Acrylates, Stabilized
Hazard Class: 3
ID Number: UN2348
Packing Group: PG III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

SECTION 15 — REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right to Know Act) Section 313:
This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act 1986 and 40 CFR Part 372.
Component: Butyl Acrylate
CAS #: 141-32-2
Amount: >= 99.0000%

[OSHA] This product is a “Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

[NSF] All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Section 103
This product contains the following substances subject to CERCLA Section 103 reporting requirements and are listed in 40 CFR Part 302.4
Component: n-Butyl acetate
CAS #: 123-86-4
Amount: <= 0.1532%

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right to Know Act) Section 302
This product contains the following substances subject to SARA Section 302 reporting requirements and are listed in 40 CFR Part 302.4
To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right to Know Act) Sections 311 and 312
Delayed (Chronic) Health Hazard: Yes
Fire Hazard: Yes
Immediate (Acute) Health Hazard: Yes
Reactive Hazard: Yes
Sudden Release of Pressure Hazard: No
<table>
<thead>
<tr>
<th>European Inventory of Existing Commercial Chemical Substances (EINECS)</th>
<th>The components of this product are on the EINECS inventory or are exempt from EINECS inventory requirements.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania (Worker and Community Right to Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List</td>
<td>The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting. Component: Butyl Acrylate CAS#: 141-32-2 Amount: &gt;=99.0000 %</td>
</tr>
<tr>
<td>Pennsylvania (Worker and Community Right to Know Act): Pennsylvania Special Hazardous Substances List</td>
<td>To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.</td>
</tr>
<tr>
<td>California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)</td>
<td>WARNING: This product contains a chemical known to the State of California to cause cancer.</td>
</tr>
<tr>
<td>California SCAQMD Rule 443.1 (South Coast Air Quality Management District Rule 443.1, Labeling of Materials Containing Organic Solvents)</td>
<td>VOC: Vapor Pressure 3.26 mmHg @ 20°C, 898 g/l</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS#</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butanol</td>
<td>71-36-3</td>
<td>&lt;= 0.0120 %</td>
</tr>
<tr>
<td>Ethyl Acrylate</td>
<td>140-88-5</td>
<td>&lt;= 0.0064%</td>
</tr>
<tr>
<td>Isobutanol</td>
<td>78-83-1</td>
<td>&lt;= 0.0004%</td>
</tr>
<tr>
<td>Hydroquinone</td>
<td>123-31-9</td>
<td>&lt;= 0.0004%</td>
</tr>
<tr>
<td>Acrylic Acid</td>
<td>79-10-7</td>
<td>&lt;= 0.0071%</td>
</tr>
</tbody>
</table>

This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

SECTION 16 — OTHER INFORMATION

Hazard Rating System

NFPA ratings for this product are: H –2  F –2  R –2

These ratings are part of a specific hazard communication program and should be disregarded where individuals are not trained in the use of this hazard rating system. You should be familiar with the hazard communication programs applicable to your workplace.

Recommended Uses and Restrictions

For industry use only

Revision

Version: 1
Revision: 07/06/2010