IDENTIFICATION

MSDS Record Number: 5618139
Product Name(s): METHACRYLIC ACID
Product Identification: MSDS NUMBER: M1880
                      PRODUCT CODE: 1506
                      C.A.S. NUMBER: 79-41-4
Date of MSDS: 2005-11-10
Currency Note: This MSDS was acquired from the supplier on 2007-09-06.

MANUFACTURER/SUPPLIER INFORMATION

Company: MALLINCKRODT BAKER INC

MATERIAL SAFETY DATA

Effective Date: 11/10/05
Supercedes: 10/04/02

CHEMTREC: 800-424-9300 (USA)
           703-527-3887
           (Outside USA & CANADA)
CANUTEC: 613-996-6666

NOTE: Use CHEMTREC and CANUTEC phone numbers only in the event of a chemical emergency.

Emergency Telephone Number: 908-859-2151

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

M A L L I N C K R O D T

METHACRYLIC ACID

1. Product Identification

Synonyms: Propenoic acid, 2-methylene; acrylic acid, 2-methyl
CAS No: 79-41-4
Molecular Weight: 86.09
Chemical Formula: C4H6O2
Product Codes: 1506
2. Composition/Information on Ingredients

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS No</th>
<th>Percent</th>
<th>Hazardous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methacrylic Acid</td>
<td>79-41-4</td>
<td>100%</td>
<td>Yes</td>
</tr>
</tbody>
</table>

3. Hazards Identification

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MATERIAL IS EXTREMELY DESTRUCTIVE TO THE UPPER RESPIRATORY TRACT, EYES AND SKIN. MAY CAUSE ALLERGIC SKIN REACTION. COMBUSTIBLE. CHRONIC EXPOSURE MAY DAMAGE LIVER AND KIDNEYS.

SAP-T-DATA(tm) Ratings (Provided here for your convenience)

- Health Rating: 2 - Moderate (Life)
- Flammability Rating: 2 - Moderate
- Reactivity Rating: 1 - Slight
- Contact Rating: 4 - Extreme (Corrosive)
- Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
- Storage Color Code: White (Corrosive)

Potential Health Effects

Inhalation:
Corrosive. Inhalation of vapors irritates the mucous membranes and respiratory tract. Symptoms may include sore throat, shortness of breath, coughing, wheezing, headache, nausea and vomiting. Inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi and chemical pneumonitis.

Ingestion:
Toxic. Corrosive. Sore throat, abdominal pain, diarrhea may occur.

Skin Contact:
Toxic. Corrosive. Causes skin burns. May cause allergic skin reaction. May be absorbed through the skin.

Eye Contact:
Corrosive. Vapors irritate the eyes. Splashes may cause blindness.

Chronic Exposure:
Prolonged exposure can damage liver and kidneys. May cause allergic skin reaction.

Aggravation of Pre-existing Conditions:
No information found.

4. First Aid Measures

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. Get medical attention.

Skin Contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing 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: 76.6°C (171°F)
Combustible!

Explosion:
Above the flash point, explosive vapor-air mixtures may be formed.

Fire Extinguishing Media:
Dry chemical, 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

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

7. Handling and Storage

Protect against physical damage. Outside or detached storage is preferred. Inside storage should be in a standard flammable liquids storage room or cabinet. Separate from oxidizing materials. Storage and use areas should be No Smoking areas. Isolate from incompatible substances. Inhibited with 1000 ppm Hydroquinone and 250 ppm MEHQ. If product freezes, thaw slowly using a 20-30°C (68-91°F) heat source with agitation to redistribute the inhibitor. DO NOT remove any material if stock frozen or partially frozen.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
- OSHA Permissible Exposure Limit (PEL): 20 ppm (TWA) skin

- ACGIH Threshold Limit Value (TLV): 20 ppm (TWA)

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 TLV is exceeded a full facepiece chemical cartridge respirator may be worn up to the maximum use concentration specified by the respirator supplier. Alternatively, a supplied air full facepiece respiratory or airlined hood may be worn. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29 CFR1910.134).

Skin Protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance:</td>
<td>Boiling Point:</td>
</tr>
<tr>
<td>Clear, colorless liquid.</td>
<td>163°C (325°F)</td>
</tr>
<tr>
<td>Odor:</td>
<td>Melting Point:</td>
</tr>
<tr>
<td>Repulsive odor.</td>
<td>16°C (61°F)</td>
</tr>
<tr>
<td>Solubility:</td>
<td>Vapor Density (Air=1):</td>
</tr>
<tr>
<td>Soluble in warm water.</td>
<td>3.0</td>
</tr>
<tr>
<td>Specific Gravity:</td>
<td>Vapor Pressure (mm Hg):</td>
</tr>
<tr>
<td>1.015</td>
<td>1 @ 25.5°C (79°F)</td>
</tr>
<tr>
<td>pH:</td>
<td>Evaporation Rate (BuAc=1):</td>
</tr>
<tr>
<td>No information found.</td>
<td>&lt; 1</td>
</tr>
<tr>
<td>% Volatiles by volume @ 21°C (70°F):</td>
<td>No information found.</td>
</tr>
</tbody>
</table>

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage. In the absence of inhibitor the substance polymerizes easily, especially on heating or in the presence of hydrochloric acid, with the generation of heat.

Hazardous Decomposition Products:
Emits acrid smoke and fumes when heated to decomposition.

Hazardous Polymerization:
If uninhibited, the material polymerizes easily, especially on heating or
in the presence of hydrochloric acid.

Incompatibilities:
Strong oxidizing agents, amines, strong bases, heat and hydrochloric acid. Corrosive to metals.

Conditions to Avoid:
No information found.

11. Toxicological Information

Oral rat LD50: 1060 mg/kg; skin rabbit LD50: 500 mg/kg; investigated as a mutagen

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>---NTP Carcinogen---</th>
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<tbody>
<tr>
<td>Methacrylic Acid (79-41-4)</td>
<td>Known: No</td>
</tr>
<tr>
<td></td>
<td>Anticipated: No</td>
</tr>
<tr>
<td></td>
<td>IARC Category: None</td>
</tr>
</tbody>
</table>

12. Ecological Information

Environmental Fate:
No information found.

Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to 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: METHACRYLIC ACID, STABILIZED
Hazard Class: 8
UN/NA: UN2531 Packing Group: II
Information reported for product/size: 500G

International (Water, I.M.O.)

Proper Shipping Name: METHACRYLIC ACID, STABILIZED
Hazard Class: 8
UN/NA: UN2531 Packing Group: II
Information reported for product/size: 500G

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

Proper Shipping Name: METHACRYLIC ACID, STABILIZED
Hazard Class: 8
UN/NA: UN2531 Packing Group: II
Information reported for product/size: 500G
15. Regulatory Information

Chemical Inventory Status - Part 1

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>TSCA</th>
<th>EC</th>
<th>Japan</th>
<th>Australia</th>
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<tbody>
<tr>
<td>Methacrylic Acid (79-41-4)</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td>Yes</td>
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</table>

Chemical Inventory Status - Part 2

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<tr>
<th>Ingredient</th>
<th>Korea</th>
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<th>NDSL</th>
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<tbody>
<tr>
<td>Methacrylic Acid (79-41-4)</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
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Federal, State & International Regulations - Part 1

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>-SARA 302-</th>
<th>-SARA 313-</th>
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<tbody>
<tr>
<td>Methacrylic Acid (79-41-4)</td>
<td>RQ</td>
<td>TPQ</td>
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Federal, State & International Regulations - Part 2

<table>
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<tr>
<th>Ingredient</th>
<th>CERCLA</th>
<th>261.33</th>
<th>8(d)</th>
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<td>Methacrylic Acid (79-41-4)</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

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

Australian Hazchem Code: 3X
Australian Poison Schedule: None allocated.

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

NFFA Ratings:
Health: 3 Flammability: 2 Reactivity: 2

Label Hazard Warning:
DANGER! CORROSIVE. CAUSES BURNS. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MATERIAL IS EXTREMELY Destructive TO THE UPPER RESPIRATORY TRACT, EYES AND SKIN. MAY CAUSE AllERgic SKIN REACTION. COMBustible. CHRONIC EXPOSURE MAY DAMAGE LIVER AND KIDNEYS.

Label Precautions:
Do not breathe vapor.
Do not get in eyes, on skin, or on clothing.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.
Keep away from heat, sparks and flame.

Label First Aid:
In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. In case of contact, immediately flush skin with plenty of water for at least 15 minutes. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, call a physician immediately.

Product Use:
Laboratory Reagent.

Revision Information:
No Changes.

Disclaimer:
******************************************************************************
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M1880

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