# Material Safety Data Sheet

## Section 1. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>NFPA</th>
<th>HMIS</th>
<th>Personal Protective Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

**Common Name/Trade Name**: Crotonic acid

**Manufacturer**: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

**Chemical Name**: Not available.

**Synonym**: trans-2-Butenoic acid

**CAS#**: 3724-65-0

**RTECS**: GQ2800000

**TSCA**: TSCA 8(b) inventory: Crotonic acid

**Commercial Name(s)**: Not available.

**Supplier**: SPECTRUM LABORATORY PRODUCTS INC.
14422 S. SAN PEDRO STREET
GARDENA, CA 90248

## Section 2. Composition and Information on Ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS #</th>
<th>TWA (mg/m³)</th>
<th>STEL (mg/m³)</th>
<th>CEIL (mg/m³)</th>
<th>% by Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Crotonic acid</td>
<td>3724-65-0</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Exposure Limits**

**Toxicological Data on Ingredients**

**ORAL (LD50)**: Acute: 1000 mg/kg [Rat], 4850 mg/kg [Mouse].

**DERMAL (LD50)**: Acute: 600 mg/kg [Rabbit], 200 mg/kg [Guinea pig].

## Section 3. Hazards Identification

### Potential Acute Health Effects

Very hazardous in case of skin contact (irritant), of eye contact (irritant), or ingestion. Hazardous in case of skin contact (corrosive), of eye contact (corrosive), or inhalation. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

### Potential Chronic Health Effects

**CARCINOGENIC EFFECTS**: Not available.

**MUTAGENIC EFFECTS**: Not available.

**TERATOGENIC EFFECTS**: Not available.

**DEVELOPMENTAL TOXICITY**: Not available.

The substance may be toxic to lungs. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

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Continued on Next Page
Section 4. First Aid Measures

Eye Contact
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion
Not available.

Section 5. Fire and Explosion Data

Flammability of the Product
Combustible.

Auto-Ignition Temperature
396°C (744.8°F)

Flash Points
OPEN CUP: 88°C (190.4°F).

Flammable Limits
Not available.

Products of Combustion
These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances
Flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances
Risks of explosion of the product in presence of mechanical impact: Not available.
Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards
When heated to decomposition it emits acrid smoke and irritating fumes, carbon dioxide, carbon monoxide.

Special Remarks on Explosion Hazards
Not available.

Section 6. Accidental Release Measures

Small Spill
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill
Combustible material. Corrosive liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal.

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## Section 7. Handling and Storage

**Precautions**
Keep container dry. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/vapor/spray. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents.

**Storage**
Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

## Section 8. Exposure Controls/Personal Protection

**Engineering Controls**
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

**Personal Protection**
Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots. Respiratory protection is not necessary for normal handling. Good room ventilation or use of local exhaust (fume hood) is sufficient. Use a vapor respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentrations of mist or vapor or dust, inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

**Personal Protection in Case of a Large Spill**
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

**Exposure Limits**
Not available.

## Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical and appearance</th>
<th>Odor</th>
<th>Taste</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid</td>
<td>Not available.</td>
<td>Not available.</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Molecular Weight</th>
<th>86.09 g/mole</th>
</tr>
</thead>
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<table>
<thead>
<tr>
<th>pH (1% soln/water)</th>
<th>Not available.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Boiling Point</th>
<th>185°C (365°F)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Melting Point</th>
<th>72°C (161.6°F)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Critical Temperature</th>
<th>Not available.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Specific Gravity</th>
<th>0.9604 - 1.03 (Water = 1)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Vapor Pressure</th>
<th>0 kPa (@ 20°C)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Vapor Density</th>
<th>2.97 (Air = 1)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Volatility</th>
<th>Not available.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Odor Threshold</th>
<th>Not available.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Water/Oil Dist. Coeff.</th>
<th>Not available.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Ionicity (in Water)</th>
<th>Not available.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Dispersion Properties</th>
<th>See solubility in water, diethyl ether, acetone.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Solubility</th>
<th>Easily soluble in hot water. Soluble in cold water, diethyl ether, acetone. SOLUBLE IN HOT PETROLEUM ETHER IN ETHANOL @ 25 DEG C: 52.5% WT/WT; ACETONE @ 25 DEG C: 53.0% W/W; IN TOLUENE @ 25 DEG C: 37.5% WT/WT Water solubility: 8.6X10+4 mg/l at 25 deg C 555 g/l in water at 20 deg C</th>
</tr>
</thead>
</table>

Continued on Next Page
Section 10. Stability and Reactivity Data

<table>
<thead>
<tr>
<th>Stability</th>
<th>The product is stable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instability Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Heat, ignition sources, incompatible materials</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Reactive with oxidizing agents.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Non-corrosive in presence of glass.</td>
</tr>
<tr>
<td>Special Remarks on Reactivity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special Remarks on Corrosivity</td>
<td>Not available.</td>
</tr>
<tr>
<td>Polymerization</td>
<td>Will not occur.</td>
</tr>
</tbody>
</table>

Section 11. Toxicological Information

<table>
<thead>
<tr>
<th>Routes of Entry</th>
<th>Inhalation. Ingestion.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toxicity to Animals</td>
<td>Acute oral toxicity (LD50): 1000 mg/kg [Rat], Acute dermal toxicity (LD50): 200 mg/kg [Guinea pig].</td>
</tr>
<tr>
<td>Chronic Effects on Humans</td>
<td>May cause damage to the following organs: lungs.</td>
</tr>
<tr>
<td>Other Toxic Effects on Humans</td>
<td>Very hazardous in case of skin contact (irritant), of ingestion. Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation.</td>
</tr>
<tr>
<td>Special Remarks on Toxicity to Animals</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special Remarks on Chronic Effects on Humans</td>
<td>Not available.</td>
</tr>
<tr>
<td>Special Remarks on other Toxic Effects on Humans</td>
<td>Acute Potential Health Effects: Skin: Corrosive. Causes severe irritation and burns. Eyes: Corrosive. Causes severe irritation and burns. Inhalation: Breathing in Crotonic Acid can irritate the nose and throat causing coughing and wheezing. It may cause burns to the respiratory tract. Ingestion: May be harmful if swallowed. Can cause digestive tract/gastrointestinal tract burns. Chronic Potential Health Effects: Inhalation: It can irritate the lungs. Repeated exposure may cause bronchitis to develop with cough, phlegm, and/or shortness of breath.</td>
</tr>
</tbody>
</table>

Section 12. Ecological Information

<table>
<thead>
<tr>
<th>Ecotoxicity</th>
<th>Not available.</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOD5 and COD</td>
<td>Not available.</td>
</tr>
<tr>
<td>Products of Biodegradation</td>
<td>Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.</td>
</tr>
<tr>
<td>Toxicity of the Products of Biodegradation</td>
<td>The products of degradation are less toxic than the product itself.</td>
</tr>
<tr>
<td>Special Remarks on the Products of Biodegradation</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Section 13. Disposal Considerations

Waste Disposal

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14. Transport Information

DOT Classification

Class 8: Corrosive material

Identification

UNNA: 2823 : Crotonic Acid, solid  PG: III

Special Provisions for Transport

Not available.

DOT (Pictograms)

Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations

Pennsylvania RTK: Crotonic acid
Massachusetts RTK: Crotonic acid
New Jersey: Crotonic acid
TSCA 8(b) inventory: Crotonic acid

California Proposition 65

Warnings

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.

California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations

EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 223-077-4).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications

WHMIS (Canada)  CLASS E: Corrosive liquid.

DSCL (EEC)  R34- Causes burns.

HMIS (U.S.A.)

Health Hazard  3
Fire Hazard  2
Reactivity  0
Personal Protection

National Fire Protection Association (U.S.A.)

Flammability

Health  3
Reactivity  0
Specific hazard

WHMIS (Canada) (Pictograms)

Continued on Next Page
## Protective Equipment

- **Gloves.**
- **Full suit.**
- **Vapor respirator.** Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.
- **Face shield.**

### Section 16. Other Information

| MSDS Code | C4850 |
| References | Not available. |
| Other Special Considerations | Major Uses: MFR OF COPOLYMERS WITH VINYL ACETATE USED IN LACQUERS & PAPER SIZING; MFR OF SOFTENING AGENTS FOR SYNTHETIC RUBBER; IN MEDICINAL CHEMISTRY, EG, MFR OF DL-THREONINE, VIT A  
Coating, resins, fungicide, corrosion resistance improvement additive. Water-soluble resins and copolymers are suitable for pharmaceuticals, binders, and film  
Chemical modifications rendering the surface layers of silicone rubber contact lenses hydrophilic property.  
Carboxylated comonomer (polyvinyl acetate latex).  
Synthesis of resins, polymers, plasticizers, and drugs. |

Validated by Sonia Owen on 10/6/2009.  
Verified by Sonia Owen.  

**CALL (310) 516-8000**

**Notice to Reader**

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.