# Material Safety Data Sheet

## Section 1. Chemical Product and Company Identification

<table>
<thead>
<tr>
<th>Common Name/ Trade Name</th>
<th>Catalog Number(s)</th>
<th>CAS#</th>
<th>RTECS</th>
<th>TSCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Captopril</td>
<td></td>
<td>62571-86-2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Manufacturer**

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

**Commercial Name(s)**

Not available.

**Synonym**

(-)-Captopril; (2S)-1-(3-Mercapto-2-methylpropionyl)-L-proline; 1-(2S)-3-Mercapto-2-methylpropionyl-L-proline; 1-(3-Mercapto-2-methyl-1-oxopropyl)-L-proline (S,S); Capoten Captopryl; D-2-Methyl-3-mercaptopropanoyl-L-proline; D-3-Mercapto-2-methylpropanoyl-L-proline; D-3-Mercapto-2-methylpropionylproline; L-Captopril; L-Proline; 1-(3-mercapto-2-methyl-1-oxopropyl)-(S)-

**Chemical Name**

1-Pyrrolidinecarboxylic acid, 1-(D-3-mercapto-2-methyl-1-propionyl)-(S,S)

**Chemical Family**

Not available.

**Chemical Formula**

C9-H15-N-O3-S

**Supplier**

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

**IN CASE OF EMERGENCY**

CHEMTREC (24hr) 800-424-9300

**CALL (310) 516-8000**

## 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) Captopril</td>
<td>62571-86-2</td>
<td></td>
<td></td>
<td></td>
<td>100</td>
</tr>
</tbody>
</table>

**Toxicological Data on Ingredients**

Not applicable.
Section 3. Hazards Identification

Potential Acute Health Effects  Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects

Carcinogenic Effects:  Not available.
Mutagenic Effects:  Not available.
Teratogenic Effects:  Not available.
Developmental Toxicity:  Not available.
Repeated or prolonged exposure is not known to aggravate medical condition.

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 if irritation occurs.

Skin Contact  Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Cold water may be used.

Serious Skin Contact  Not available.

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

Serious Inhalation  Not available.

Ingestion  Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion  Not available.

Section 5. Fire and Explosion Data

Flammability of the Product  May be combustible at high temperature.

Auto-Ignition Temperature  Not available.

Flash Points  Not available.

Flammable Limits  Not available.

Products of Combustion  These products are carbon oxides (CO, CO2), nitrogen oxides (NO, NO2...).

Fire Hazards in Presence of Various Substances  Slightly flammable to flammable in presence of heat.


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  As with most organic solids, fire is possible at elevated temperatures

Special Remarks on Explosion Hazards  Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
Section 6. Accidental Release Measures

Small Spill
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label.

Storage
Keep container tightly closed. Keep container in a cool, well-ventilated area at ambient (room) temperature. Do not store above 30°C (86°F).

Section 8. Exposure Controls/Personal Protection

Engineering Controls
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection
Safety glasses. Lab coat. Dust respirator. Use a dust respirator if room ventilation is inadequate and handling of material produces visible dust clouds. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill
Splash goggles. Full suit. Dust 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

Physical state and appearance
Solid. (Crystalline powder.)

Molecular Weight
217.29 g/mole

pH (1% soln/water)
Not available.

Boiling Point
Not available.

Melting Point
103°C (217.4°F) - 106 C.

Critical Temperature
Not available.

Specific Gravity
Not available.

Vapor Pressure
Not applicable.

Vapor Density
Not available.

Volatility
Not available.

Odor Threshold
Not available.

Water/Oil Dist. Coeff.
The product is more soluble in oil; log(oil/water) = 0.3

Ionicity (in Water)
Not available.

Dispersion Properties
See solubility in water, methanol.

Solubility
Soluble in cold water, methanol.
Solubility in Water: 160 mg/ml.
Sparingly soluble in chloroform, ethyl acetate.
Soluble in ethanol.

Continued on Next Page
### Section 10. Stability and Reactivity Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stability</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Instability Temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Conditions of Instability</td>
<td>Excess heat</td>
</tr>
<tr>
<td>Incompatibility with various substances</td>
<td>Not available.</td>
</tr>
<tr>
<td>Corrosivity</td>
<td>Not available.</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>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routes of Entry</td>
<td>Inhalation, Ingestion.</td>
</tr>
<tr>
<td>Toxicity to Animals</td>
<td>Acute oral toxicity (LD50): 2078 mg/kg [Mouse].</td>
</tr>
<tr>
<td>Chronic Effects on Humans</td>
<td>Not available.</td>
</tr>
<tr>
<td>Other Toxic Effects on Humans</td>
<td>Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.</td>
</tr>
<tr>
<td>Special Remarks on Toxicity to Animals</td>
<td>Lowest Published Lethal Dose/Conc:</td>
</tr>
<tr>
<td></td>
<td>LDL [Man] - Route: Oral; Dose: 16 mg/kg</td>
</tr>
<tr>
<td>Special Remarks on Chronic Effects on Humans</td>
<td>May cause adverse reproductive effects and birth defects (teratogenic)</td>
</tr>
<tr>
<td>Special Remarks on other Toxic Effects on Humans</td>
<td>Potential Health Effects:</td>
</tr>
<tr>
<td></td>
<td>Skin: May cause skin irritation.</td>
</tr>
<tr>
<td></td>
<td>Eyes: May cause eye irritation.</td>
</tr>
<tr>
<td></td>
<td>Inhalation: Dust may cause respiratory tract irritation.</td>
</tr>
<tr>
<td></td>
<td>Ingestion: May cause nausea, vomiting, diarrhea, heavy sweating, salty or metallic taste or decreased ability to taste, mouth sores, sore throat, cough, unusual brusing, chest pain, swelling of the face, eyes, lips, tongue, arms or legs, difficulty breathing or swallowing, rash/dermatitis. May affect behavior/central nervous system (dizziness, drowsiness, lightheadedness, fainting, somnolence, excessive tiredness). May increase risk of dangerous allergic reactions. It may increase insulin sensitivity. It may affect kidneys (changes in glomeruli, Proteinuria, Hematuria, renal failure, acute tubular necrosis), liver, blood (changes in red blood cell count - normocytic anemia, hemolysis with or without anemia), metabolism (potassium levels in blood)</td>
</tr>
<tr>
<td>Medical Conditions Aggravated By Exposure:</td>
<td>allergic reaction; kidney disease, liver disease, a salt-restricted diet or high levels of potassium in blood; taking a salt substitute, potassium supplement; diabetes, cleroderm or lupus; heart disease; stroke</td>
</tr>
</tbody>
</table>

### Section 12. Ecological Information

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecotoxicity</td>
<td>Not available.</td>
</tr>
<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 product itself and its products of degradation are not toxic.</td>
</tr>
<tr>
<td>Special Remarks on the Products of Biodegradation</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Continued on Next Page
### 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**
Not a DOT controlled material (United States).

**Identification**
Not applicable.

**Special Provisions for Transport**
Not applicable.

**DOT (Pictograms)**

### Section 15. Other Regulatory Information and Pictograms

**Federal and State Regulations**
No products were found.

**California Proposition 65**
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 Warnings**
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. 263-607-1).
Canada: Listed on Canadian Domestic Substance List (DSL).
Korea: Listed on National Inventory (KECI).
Australia: Listed on AICS.

**Other Classifications**

<table>
<thead>
<tr>
<th>WHMIS (Canada)</th>
<th>DSCL (EEC)</th>
<th>HMIS (U.S.A.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not controlled under WHMIS (Canada).</td>
<td>This product is not classified according to the EU regulations.</td>
<td></td>
</tr>
</tbody>
</table>

**HMIS (U.S.A.)**

<table>
<thead>
<tr>
<th>Health Hazard</th>
<th>Fire Hazard</th>
<th>Reactivity</th>
<th>Personal Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>E</td>
</tr>
</tbody>
</table>

**National Fire Protection Association (U.S.A.)**
Health 1, Reactivity 0, Specific hazard 0

**WHMIS (Canada) (Pictograms)**

**DSCL (Europe) (Pictograms)**

Continued on Next Page
### Protective Equipment
- Gloves.
- Lab coat.
- Dust respirator. Be sure to use an approved/certified respirator or equivalent.
- Safety glasses.

### Section 16. Other Information

**MSDS Code**
- C3728

**References**
- Not available.

**Other Special Considerations**
- Use: Drug to treat high blood pressure and heart failure. An ACE inhibitor


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.