

# MATERIAL SAFETY DATA SHEET

## Chemical Product

Product Name: L (+) TARTARIC ACID (Extra Pure)

CAS#: 87-69-4

Synonym: 2,3-Dihydroxybutanedioic acid; L-(+)-Tartaric Acid; Malic acid, 3-hydroxy-; Succinic acid, 2,3- dihydroxy

Chemical Name: Tartaric Acid

Chemical Formula:  $\text{HOOC}(\text{CHOH})_2\text{COOH}$

## Composition and Information on Ingredients

Name	S.K.U	% by Weight
L (+) TARTARIC ACID	GCS-2583	100

## Hazards Identification

### Potential Acute Health Effects:

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation (lung irritant). Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Severe over-exposure can produce lung damage, choking, unconsciousness or death.

### Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC

EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

## 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.

### Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.

Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

**Serious Skin Contact:**

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek 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: Not available.

**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.

**Fire and Explosion Data**

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 425°C (797°F)

Flash Points: OPEN CUP: 210°C (410°F)

Flammable Limits: Not available.

Products of Combustion: These products are carbon oxides (CO, CO<sub>2</sub>).

**Fire Hazards in Presence of Various Substances:**

Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.

**Explosion Hazards in Presence of Various Substances:**

Slightly explosive in presence of open flames and sparks. Non-explosive in presence of shocks.

**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 presences of an ignition source is a potential dust explosion hazard.

**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.

**Handling and Storage****Precautions:**

Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not breathe dust. Never add water to this product. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, alkalis.

**Storage:**

Keep container tightly closed. Keep container in a cool, well-ventilated area.

**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:**

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

**Personal Protection in Case of a Large Spill:**

Splash goggles. Full suit. Vapor and 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.

.

**Physical and Chemical Properties**

Physical state and appearance: Solid. (Crystalline solid.)

Odor: Odorless.

Taste: Acid.

Molecular Weight: 150.09 g/mole

Color: White.

pH (1% soln/water): Not available.

Boiling Point: Not available.

Melting Point: 168°C

(334.4°F) - 172 C

Critical Temperature:

Not available.

Specific Gravity:

Density: 1.76 (Water = 1)

Vapor Pressure:

Not applicable.

Vapor Density: 5.18 (Air = 1)

Volatility: Not available.

Odor Threshold:

Not available.

Water/Oil Dist.

Coeff.: Not

available. Ionicity

(in Water): Not

available.

Dispersion Properties: See solubility in water, methanol, diethyl ether.

#### **Solubility:**

Easily soluble in cold water, hot water, methanol. Soluble in diethyl ether. Solubility in Water: 1g/0.75 ml at room temperature. 1g/0.5 ml boiling water 115 g/100 ml @ 0 C 126 g/100 ml @ 10 C 139 g/100 ml @ 20 C 156 g/100 ml @ 30 C 176 g/100 ml @ 40 C 195 g/100 ml @ 50 C 217 g/100 ml @ 60 C 244 g/100 ml @ 70 C 273 g/100 ml @ 80 C 307 g/100 ml @ 90 C Solubility in methanol: 1 g/1.7 ml Solubility in ethanol: 1 g/3 ml Solubility in propanol: 1 g/10.5 ml Solubility in ether: 1 g/250 ml Also soluble in glycerol. Insoluble in chloroform

### **Stability and Reactivity Data**

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, dust generation, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, alkalis.

Corrosivity: Non-corrosive in presence of glass.

#### **Special Remarks on Reactivity:**

Violent reaction possible with silver. Aqueous solution of tartaric acid can liberate explosive H<sub>2</sub> gas if contact with reactive metals (Iron, Zinc, Aluminum)

Special Remarks on Corrosivity: Not available.  
Polymerization: Will not occur.

## Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: LD50: Not available. LC50: Not available.

Chronic Effects on Humans: Not available.

### Other Toxic Effects on Humans:

Hazardous in case of skin contact (irritant), of ingestion, of inhalation (lung irritant).

### Special Remarks on Toxicity to Animals:

Lowest Published Lethal Dose: LDL [Rat - Route: oral; Dose: 7500 mg/kg LDL [Rabbit] - Route: Oral; Dose: 5000 mg/kg LDL [Dog] - Route: Oral; Dose: 5000 mg/kg Lethal Dose/Conc 50% kill: LD50 [Mouse] - Route: Intravenous; Dose: 485 mg/kg

Special Remarks on Chronic Effects on Humans: Not available.

### Special Remarks on other Toxic Effects on Humans:

Acute Potential Health Effects: Skin: Causes skin irritation Eyes: Causes eye irritation  
Inhalation: Causes respiratory tract irritation Ingestion: Causes gastrointestinal tract irritation with nausea, vomiting and diarrhea. May affect kidneys (kidney damage), blood, and behavior (convulsions, somnolence), and respiration. Chronic Potential Health Effects: Ingestion: Repeated or prolonged ingestion may cause lesions of the mouth, gastric ulcers, gastrointestinal hyperacidity, and symptoms similar to those of metal fume fever - flu-like condition with fever, chills, sweats, nausea, vomiting, muscle aches, pains, and weakness. Skin: Repeated or prolonged skin contact may cause skin ulcerations or lesions.

Toxicological Data on Ingredients: L-Tartaric acid LD50: Not available. LC50: Not available.

## Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

## Disposal Considerations

### Waste Disposal:

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

## Transformation Information

Land transport (ADR-RID)

General information: Not regulated.

Sea transport (IMDG) [English only]

General information: Not regulated.

Air transport (ICAO-IATA) [English only]

General information: Not regulated.

## Other Regulatory Information

Federal and State Regulations: TSCA 8(b) inventory: L-Tartaric acid

Other Regulations: Not available.

### Other Classifications:

WHMIS (Canada): CLASS E: Corrosive solid.

### DSCL (EEC):

R36/37/38- Irritating to eyes, respiratory system and skin. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.

### HMIS (U.S.A.):

Health Hazard: 2

### Fire Hazard: 1

Reactivity: 0

### Personal Protection: E

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

### Health: 2

Flammability: 1

### Reactivity: 0

Specific hazard:

**Protective Equipment:**

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

**Additional Information**



References: Not available.

Other Special Considerations: Not available.

## ***Disclaimer:***

\*\*\*\*\*

The information contained herein in good faith but makes no representations as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose.

 **makes no representations or warranties, either express or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product to which the information refers. Accordingly,  will not be responsible for damages resulting from use of or reliance upon this information.**