

# Material Safety Data Sheets

## 1. IDENTIFICATION

Product Name	Tartaric Acid
Other Names	d-2,3-Dihydroxybutanedioic acid; L-Tartaric acid; L-Tartaric acid, (+)-; Succinic acid, 2,3-dihydroxy-
Uses	Various applications.
Chemical Family	No Data Available
Chemical Formula	C <sub>4</sub> H <sub>6</sub> O <sub>6</sub>
Chemical Name	Butanedioic acid, 2,3-dihydroxy- [R-(R*,R*)]-
Product Description	No Data Available
Company	Arman sina.co
Contact Information	<a href="mailto:info@armansina.com">info@armansina.com</a> <a href="http://www.armansina.com">www.armansina.com</a>

## 2. HAZARD IDENTIFICATION

Hazard Categories	Serious Eye Damage/Irritation
Risk Phrases	Causes serious eye damage.
Safety Phrases	Wear eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.

Symbol



## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### Ingredients

Chemical Entity	Formula	CAS Number	Proportion
L-Tartaric acid	C <sub>4</sub> H <sub>6</sub> O <sub>6</sub>	87-69-4	<=100 %

## 4. FIRST AID MEASURES

### *Description of necessary measures according to routes of exposure*

<b>Swallowed</b>	IF SWALLOWED: Rinse mouth, then drink plenty of water. Do not induce vomiting. Get medical advice/attention.
<b>Eye</b>	IF IN EYES: Immediately flush eyes with running water for several minutes, holding eyelids open and occasionally lifting the upper and lower lids. Immediately call a Poison Centre or doctor/physician for advice. Remove contact lenses if present and easy to do. Continue rinsing for at least 15 minutes. Obtain immediate medical care.
<b>Skin</b>	IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse. If skin irritation occurs, get medical advice/attention.
<b>Inhaled</b>	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing until recovered. If

respiratory symptoms persist, get medical advice/attention.

**Advice to Doctor** Treat symptomatically.

**Medical Conditions Aggravated by No information available.**

**Exposure**

## 5. FIRE FIGHTING MEASURES

<b>General Measures</b>	If safe to do so, move undamaged containers from fire area. Cool containers with water spray until well after fire is out.
<b>Flammability Conditions</b>	Combustible solid; May burn but does not ignite readily.
<b>Extinguishing Media</b>	Use dry chemical, Carbon dioxide (CO <sub>2</sub> ), normal foam or water spray for extinction.
<b>Fire and Explosion Hazard</b>	Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
<b>Hazardous Products of Combustion</b>	Fire may produce irritating and/or toxic fumes, including Carbon oxides.
<b>Special Fire Fighting Instructions</b>	Contain runoff from fire control or dilution water - Runoff may pollute waterways.
<b>Personal Protective Equipment</b>	Wear self-contained breathing apparatus (SCBA) and chemical splash suit. SCBA and structural firefighter's uniform may provide limited protection.
<b>Flash Point</b>	>100 ° C
<b>Lower Explosion Limit</b>	No Data Available
<b>Upper Explosion Limit</b>	No Data Available
<b>Auto Ignition Temperature</b>	No Data Available
<b>Hazchem Code</b>	No Data Available

## 6. ACCIDENTAL RELEASE MEASURES

<b>General Response Procedure</b>	Ensure adequate ventilation. ELIMINATE all ignition sources. Do not touch or walk through spilled material. Avoid dust formation. Avoid breathing dust and contact with eyes, skin and clothing.
<b>Clean Up Procedures</b>	Collect material (vacuum or sweep up) and place into suitable containers for disposal (see SECTION 13). Avoid dispersal of dust in the air (i.e. clearing dusty surfaces with compressed air). Non-sparking tools should be used.
<b>Containment</b>	Stop leak if safe to do so – Prevent entry into waterways, drains or confined areas. Prevent dust clouds.
<b>Decontamination</b>	Wash area down with excess water.
<b>Environmental Precautionary Measures</b>	Prevent entry into drains and waterways.
<b>Evacuation Criteria</b>	Spill or leak area should be isolated immediately. Keep unauthorised personnel away.
<b>Personal Precautionary Measures</b>	Use personal protective equipment as required (see SECTION 8).

## 7. HANDLING AND STORAGE

<b>Handling</b>	Safety showers and eyewash facilities should be provided within the immediate work area for emergency use. Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Minimise dust generation and accumulation. Avoid breathing dust and contact with eyes, skin and clothing. Do not ingest. Use personal protective equipment as required (see SECTION 8). Dust explosion hazard - Take precautionary measures against static discharge. Keep away from heat and ignition sources - No smoking.
<b>Storage</b>	Store in a cool, dry and well-ventilated place, out of direct sunlight. Keep container tightly closed. Avoid exposure to moisture. Keep away from heat and ignition sources - No smoking. Keep away from incompatible materials (see SECTION 10).
<b>Container</b>	Keep in the original container.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<b>General</b>	<p>No specific exposure standards are available for this product. For dusts from solid substances without specific occupational exposure standards:</p> <ul style="list-style-type: none"><li>- Safe Work Australia Exposure Standard (Nuisance dusts): 8 hr TWA = 10 mg/m<sup>3</sup> (measured as inhalable dust).</li><li>- New Zealand WES (Particulates not otherwise classified): TWA = 10 mg/m<sup>3</sup>; TWA = 3 mg/m<sup>3</sup> (respirable dust).</li><li>- OSHA PEL (Particulates not otherwise regulated): TWA = 15 mg/m<sup>3</sup> (total); TWA = 5 mg/m<sup>3</sup> (respirable).</li></ul> <p>Derived no-effect levels (DNELs):</p> <ul style="list-style-type: none"><li>- Worker, Dermal: 2.9 mg/kg bw/day</li><li>- Worker, Inhalation: 5.2 mg/m<sup>3</sup></li></ul>
<b>Exposure Limits</b>	No Data Available
<b>Biological Limits</b>	<p>Predicted no-effect concentrations (PNECs):</p> <ul style="list-style-type: none"><li>- Freshwater: 0.3125 mg/L</li><li>- Marine water: 0.3125 mg/L</li><li>- Intermittent release: 0.514 mg/L</li><li>- STP: 10 mg/L</li><li>- Freshwater sediment: 1.141 ppm</li><li>- Marine water sediment: 1.141 ppm</li><li>- Soil: 0.0449 ppm</li><li>- Oral: No potential bioaccumulation.</li></ul>
<b>Engineering Measures</b>	A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. 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.
<b>Personal Protection Equipment</b>	<ul style="list-style-type: none"><li>- Respiratory protection: Wear respiratory protection in case of inadequate ventilation or in the presence of dust. Recommended: Dust mask/particulate (P2) filter respirator (refer to AS/NZS 1715 &amp; 1716).</li><li>- Eye/face protection: Wear appropriate eye protection to prevent eye contact. Recommended: Chemical goggles.</li><li>- Hand protection: Handle with gloves. Recommended: Impervious gloves, e.g. Nitrile rubber (thickness: &gt;0.35 mm) or Butyl rubber (thickness: &gt;0.5 mm); Break through time: &gt;480 min.</li><li>- Skin/body protection: Wear appropriate personal protective clothing to avoid skin contact. Recommended: Impervious work clothing and safety footwear for professional use.</li></ul>
<b>Special Hazards Precautions</b>	No information available.
<b>Work Hygienic Practices</b>	Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Take off contaminated clothing and wash before reuse.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State</b>	Solid
<b>Appearance</b>	Crystalline powder
<b>Odour</b>	Odourless
<b>Colour</b>	White
<b>pH</b>	2.2 (Solution 0.1 N)

<b>Vapour Pressure</b>	<5 Pa (@ 20 ° C)
<b>Relative Vapour Density</b>	No Data Available
<b>Boiling Point</b>	179.1 ° C
<b>Melting Point</b>	169 ° C
<b>Freezing Point</b>	No Data Available
<b>Solubility</b>	1,390 g/L in water 20° C
<b>Specific Gravity</b>	1.76 (Water = 1)
<b>Flash Point</b>	>100 ° C
<b>Auto Ignition Temp</b>	No Data Available
<b>Evaporation Rate</b>	No Data Available
<b>Bulk Density</b>	No Data Available
<b>Corrosion Rate</b>	No Data Available
<b>Decomposition Temperature</b>	No Data Available
<b>Density</b>	1.76 g/cm3
<b>Specific Heat</b>	No Data Available
<b>Molecular Weight</b>	No Data Available
<b>Net Propellant Weight</b>	No Data Available
<b>Octanol Water Coefficient</b>	Log Pow: -1.91 (20° C)
<b>Particle Size</b>	No Data Available
<b>Partition Coefficient</b>	No Data Available
<b>Saturated Vapour Concentration</b>	No Data Available
<b>Vapour Temperature</b>	No Data Available
<b>Viscosity</b>	No Data Available
<b>Volatile Percent</b>	No Data Available
<b>VOC Volume</b>	No Data Available
<b>Additional Characteristics</b>	No information available.
<b>Potential for Dust Explosion</b>	Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
<b>Fast or Intensely Burning Characteristics</b>	No information available.
<b>Flame Propagation or Burning Rate of Solid Materials</b>	No information available.
<b>Non-Flammables That Could Contribute Unusual Hazards to a Fire</b>	No information available.
<b>Properties That May Initiate or Contribute to Fire Intensity</b>	Combustible solid; May burn but does not ignite readily.
<b>Reactions That Release Gases or Vapours</b>	Fire/decomposition may produce irritating and/or toxic fumes, including Carbon oxides.
<b>Release of Invisible Flammable Vapours and Gases</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>General Information</b>	The product is not reactive under recommended use and storage conditions.
<b>Chemical Stability</b>	Stable under normal conditions.

<b>Conditions to Avoid</b>	Avoid dust formation. Keep away from heat and ignition sources.
<b>Materials to Avoid</b>	Incompatible/reactive with bases, oxidising agents, reducing agents, silver, fluorine and metal.
<b>Hazardous Decomposition Products</b>	Fire/decomposition may produce irritating and/or toxic fumes, including Carbon oxides.
<b>Hazardous Polymerisation</b>	Will not occur.

## 11. TOXICOLOGICAL INFORMATION

<b>General Information</b>	<ul style="list-style-type: none"> <li>- Acute toxicity: May be harmful if swallowed. Swallowing may result in nausea, vomiting, diarrhoea and abdominal pain.</li> <li>- Skin corrosion/irritation: Contact with skin may result in irritation.</li> <li>- Eye damage/irritation: Cause serious eye damage. A severe eye irritant; Contamination of eyes can result in permanent injury.</li> <li>- Respiratory/skin sensitisation: Not sensitising.</li> <li>- Germ cell mutagenicity: No mutagenic effect.</li> <li>- Carcinogenicity: No information available.</li> <li>- Reproductive toxicity: No information available.</li> <li>- STOT (single exposure): Material may be irritating to the mucous membranes of the respiratory tract.</li> <li>- STOT (repeated exposure): No information available.</li> <li>- Aspiration toxicity: No information available.</li> </ul>
<b>Acute</b>	
<b>Ingestion</b>	Acute toxicity (Oral): - LD50, Rat: >2,000 mg/kg bw. [Supplier's SDS].
<b>Other</b>	Acute toxicity (Dermal): - LD50, Rat: >2,000 mg/kg bw. [Supplier's SDS].
<b>Carcinogen Category</b>	None

## 12. ECOLOGICAL INFORMATION

<b>Ecotoxicity</b>	Aquatic toxicity: - LC50, Fish: >100 mg/L (96 h) [Supplier's SDS]. - EC50, Daphnia: 93.3 mg/L (48 h) [Supplier's SDS]. - ErC50, Algae: 51.4 mg/L (72 h) [Supplier's SDS].
<b>Persistence/Degradability</b>	Readily biodegradable.
<b>Mobility</b>	No information available.
<b>Environmental Fate</b>	Prevent entry into drains and waterways.
<b>Bioaccumulation Potential</b>	Based on the n-octanol/water partition coefficient (Log Pow = -1.91), the product has a low bioaccumulation potential.
<b>Environmental Impact</b>	No Data Available

## 13. DISPOSAL CONSIDERATIONS

<b>General Information</b>	Dispose of contents/container by controlled incineration or authorised landfill and in accordance with local/regional/national regulations.
<b>Special Precautions for Land Fill</b>	No information available.

## 14. TRANSPORT INFORMATION

### Land Transport

Proper Shipping Name	Tartaric acid
Class	No Data Available
Subsidiary Risk(s)	No Data Available
	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for LAND transport.

### Sea Transport

Proper Shipping Name	Tartaric acid
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
EMS	No Data Available
Marine Pollutant	No
Comments	NON-DANGEROUS GOODS: Not regulated for SEA transport.

### Air Transport

Proper Shipping Name	Tartaric acid
Class	No Data Available
Subsidiary Risk(s)	No Data Available
UN Number	No Data Available
Hazchem	No Data Available
Pack Group	No Data Available
Special Provision	No Data Available
Comments	NON-DANGEROUS GOODS: Not regulated for AIR transport.

## 16. OTHER INFORMATION

Revision	2
Key/Legend	<p>           &lt; Less Than            &gt; Greater Than            atm Atmosphere            CAS Chemical Abstracts Service (Registry Number)            cm<sup>2</sup> Square Centimetres            CO<sub>2</sub> Carbon Dioxide            COD Chemical Oxygen Demand            deg C (° C) Degrees Celcius            deg F (° F) Degrees Farenheit            g Grams            g/cm<sup>3</sup> Grams per Cubic Centimetre            g/l Grams per Litre            HSNO Hazardous Substance and New Organism            IDLH Immediately Dangerous to Life and Health            immiscible Liquids are insoluable in each other.            inHg Inch of Mercury            inH<sub>2</sub>O Inch of Water            K Kelvin            kg Kilogram            kg/m<sup>3</sup> Kilograms per Cubic Metre            lb Pound            LC<sub>50</sub> LC stands for lethal concentration. LC<sub>50</sub> is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.            LD<sub>50</sub> LD stands for Lethal Dose. LD<sub>50</sub> is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals.            ltr or L Litre            m<sup>3</sup> Cubic Metre            mbar Millibar            mg Milligram            mg/24H Milligrams per 24 Hours            mg/kg Milligrams per Kilogram            mg/m<sup>3</sup> Milligrams per Cubic Metre            Misc or Miscible Liquids form one homogeneous liquid phase regardless of the amount of either component present.            mm Millimetre            mmH<sub>2</sub>O Millimetres of Water            mPa.s Millipascals per Second            N/A Not Applicable            NIOSH National Institute for Occupational Safety and Health            NOHSC National Occupational Heath and Safety Commission            OECD Organisation for Economic Co-operation and Development            Oz Ounce            PEL Permissible Exposure Limit            Pa Pascal            ppb Parts per Billion            ppm Parts per Million            ppm/2h Parts per Million per 2 Hours            ppm/6h Parts per Million per 6 Hours            psi Pounds per Square Inch            R Rankine            RCP Reciprocal Calculation Procedure            STEL Short Term Exposure Limit            TLV Threshold Limit Value            tne Tonne            TWA Time Weighted Average            ug/24H Micrograms per 24 Hours            UN United Nations            wt Weight         </p>