

CHAITANYA CHS, 2<sup>nd</sup> FLOOR, OFFICE # 206, SIDDHARTH NAGAR, S.V.ROAD, GOREGAON (W), MUMBAI 400062, MH, INDIA.  
CONTACT: +9122 28725393 /94/ 95 | EMAILID: CARE@SUVCHEM.COM

**MATERIAL SAFETY DATA SHEET (MSDS)****SUCCINIC ACID (FOR SYNTHESIS)****1. Product Identification**

**Synonyms:** Butanedioic acid; amber acid  
**CAS No.:** 110-15-6

Product Coad: S0198505000

**Molecular Weight:** 118.10  
**Chemical Formula:** HOOCCH<sub>2</sub>CH<sub>2</sub>COOH

**2. Composition/Information on Ingredients**

Ingredient	CAS No	Percent	Hazardous
Succinic Acid	110-15-6	90 - 100%	Yes

**3. Hazards Identification**

**Emergency Overview WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. EYE IRRITATION MAY BE SEVERE.**

**Inhalation:** Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath. **Ingestion:** Large oral doses may cause irritation to the gastrointestinal tract.

**Skin Contact:** Causes irritation to skin. Symptoms include redness, itching, and pain.

**Eye Contact:** Causes irritation, redness, and pain. Irritation may be severe.

**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:** Give large amounts of water to drink. Never give anything by mouth to an unconscious person. Get medical attention. **Skin Contact:** In case of contact, immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician. **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:** As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source. **Explosion:** Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

**Fire Extinguishing Media:** Water spray, dry chemical, alcohol 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. Water spray may be used to keep fire exposed containers cool.

**6. Accidental Release Measures**

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

**7. Handling and Storage**

Store in a tightly closed container. Protect container from physical damage. Store in a cool, dry, ventilated area away from sources of heat or ignition. Isolate from oxidizing materials. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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#### 8. Exposure Controls/Personal Protection

**Airborne Exposure Limits:** None established. **Ventilation System:** 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. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details. **Personal Respirators (NIOSH Approved):** For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-

Supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. **Skin Protection:** Wear protective gloves and clean body-covering clothing.

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

#### 9. Physical and Chemical Properties

**Appearance:** White crystals. **Odor:** Odorless. **Solubility:** 100 g/100 ml water @ 100C (212F). 1g/13mL cold water. **Specific Gravity:** 1.57 @ 25C/4C **pH:** 2.7 (0.1 molar solution) % **Volatiles by volume @ 21C (70F):** 0 **Boiling Point:** 235C (455F) **Melting Point:** 188C (370F)

#### 10. Stability and Reactivity

**Stability:** Stable under ordinary conditions of use and storage. **Hazardous Decomposition Products:** May produce acrid smoke and irritating fumes when heated to decomposition. **Hazardous Polymerization:** Will not occur. **Incompatibilities:** Oxidizers and bases. **Conditions to Avoid:** Incompatibles.

#### 11. Toxicological Information

Oral rat LD50: 2260 mg/kg; Irritation eye rabbit, standard Draize, 750 ug (severe); Investigated as a mutagen.

---NTP Carcinogen---

Ingredient	Known	Anticipated	IARC Category
Succinic Acid (110-15-6)	No	No	None

#### 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 managed in an appropriate and approved waste disposal 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

NON HAZARDOUS FOR AIR, ROAD AND SEA TRANSPORT

#### 15. REGULATORY

SARA Title III: N/A

Federal Regulatory: N/A

**MATERIAL SAFETY DATA SHEET (MSDS)****SUCCINIC ACID (FOR SYNTHESIS)****16. Other Information**

**NFPA Ratings:** Health: 2 Flammability: 1 Reactivity: 0

**Label Hazard Warning:** WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. EYE IRRITATION MAY BE SEVERE. **Label**

**Precautions:** Avoid contact with eyes, skin and clothing.

Avoid breathing dust. Keep container closed. Use only with adequate ventilation.

Wash thoroughly after handling. **Label First Aid:** In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician. **Product Use:** Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

**DISCLAIMER:**

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation 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.

**End of document**