Section 1. Product and Company Identification

Product Name: Succinic Acid
CAS Number: 110-15-6

Parchem - fine & specialty chemicals
415 Huguenot Street
New Rochelle, NY 10801
(914) 654-6800 (914) 654-6899
parchem.com info@parchem.com

Section 2. Hazards Identification

Classification of the substance or mixture
GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Serious eye damage (Category 1), H318

GHS Label Elements

Pictograms:

Signal word: DANGER!

Hazard and precautionary statements

Hazard statement(s)
H318 Causes serious eye damage.

Precautionary statement(s)
P280 Wear eye protection/ face protection.
P305 + P351 + P338 + P310 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 CENTER or doctor/ physician.

Hazards not otherwise classified (HNOC) or not covered by GHS: None
Section 3. Composition / Information on Ingredients

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Succinic Acid</th>
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<tbody>
<tr>
<td>Synonym(s)</td>
<td>Butanedioic acid</td>
</tr>
<tr>
<td>Formula</td>
<td>C₄H₆O₄</td>
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<th>COMPONENT</th>
<th>CAS NUMBER</th>
<th>CONCENTRATION</th>
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<tr>
<td>Succinic Acid</td>
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Section 4. First Aid Measures

Description of first aid measures
General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
In case of skin contact: Wash off with soap and plenty of water. Consult a physician.
In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
If swallowed: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labelling and/or in section 11
Indication of any immediate medical attention and special treatment needed: No data available

Section 5. Firefighting Measures

Extinguishing media
Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture: Carbon oxides
Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.
Further information: No data available

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust. For personal protection see section 8.
**Environmental precautions:** Do not let product enter drains.

**Methods and materials for containment and cleaning up:** Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

**Reference to other sections:** For disposal see section 13.

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### Section 7. Handling and Storage

**Precautions for safe handling:** Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed.

**Conditions for safe storage, including any incompatibilities:** Keep container tightly closed in a dry and well-ventilated place.

Storage class (TRGS 510): Non Combustible Solids

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### Section 8. Exposure Controls / Personal Protection

**Control parameters**

**Components with workplace control parameters:** Contains no substances with occupational exposure limit values.

**Exposure controls**

**Appropriate engineering controls:** Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

**Personal protective equipment**

**Eye/face protection:** Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

**Skin protection:** Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

**Body Protection:** Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection:** Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

**Control of environmental exposure:** Do not let product enter drains.
Section 9. Physical and Chemical Properties

**Information on basic physical and chemical properties**

**Form:** Crystalline  
**Color:** White  
**Odor:** Odorless  
**Melting point/freezing point:** Melting point/range: 184 - 186°C (363 - 367°F) · lit.  
**Initial boiling point and boiling range:** 235°C (455°F) at 1,013 hPa (760 mmHg)  
**Relative density:** 1.564 g/cm³ at 15°C (59°F)  
**Water solubility:** 83 g/l at 25°C (77°F) · soluble

Section 10. Stability and Reactivity

**Reactivity:** No data available  
**Chemical stability:** Stable under recommended storage conditions.  
**Possibility of hazardous reactions:** No data available  
**Conditions to avoid:** No data available  
**Incompatible materials:** Bases, Oxidizing agents, Reducing agents  
**Hazardous decomposition products**  
**Other decomposition products:** No data available  
**In the event of fire:** See section 5

Section 11. Toxicological Information

**Information on toxicological effects**

**Acute toxicity**  
LD₅₀ Oral · Rat · 2,260 mg/kg  
LC₅₀ Inhalation · Rat · male and female · 4 h · > 1.284 mg/l  
(OECD Test Guideline 403)  
Dermal: No data available  
**Skin corrosion/irritation**  
Skin · Rabbit  
Result: No skin irritation · 4 h  
(OECD Test Guideline 404)  
**Serious eye damage/eye irritation**  
Eyes · Rabbit  
Result: Risk of serious damage to eyes · 24 h  
(OECD Test Guideline 405)  
**Respiratory or skin sensitization**  
Maximization Test (GPMT) · Guinea pig  
Result: Does not cause skin sensitization.  
(OECD Test Guideline 406)
Germ cell mutagenicity
Ames test
S. typhimurium
Result: negative

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available
Specific target organ toxicity - single exposure: No data available
Specific target organ toxicity - repeated exposure: No data available
Aspiration hazard: No data available
Additional Information: RTECS: WM4900000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12. Ecological Information

Toxicity
Toxicity to fish: semi-static test LC50 · Danio rerio (zebra fish) · > 100 mg/l · 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates: Immobilization EC50 · Daphnia magna (Water flea) · > 100 mg/l · 48 h (OECD Test Guideline 202)
Toxicity to algae: Growth inhibition EC50 · Pseudokirchneriella subcapitata (green algae) · > 100 mg/l · 72 h (OECD Test Guideline 201)
Toxicity to bacteria: Respiration inhibition EC50 · Sludge Treatment · > 300 mg/l · 3 h (OECD Test Guideline 209)

Persistence and degradability
Biodegradability
Aerobic · Exposure time 28 d
Result: 96.55 % · Readily biodegradable

Bioaccumulative potential: No data available
Mobility in soil: No data available
Results of PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects: No data available

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

DOT (US)  
Not dangerous goods

IMDG  
Not dangerous goods

IATA  
Not dangerous goods

Section 15. Regulatory Information

SARA 302 Components  
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components  
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards  
Acute Health Hazard

Massachusetts Right to Know Components  
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components

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New Jersey Right to Know Components

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California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

HMIS Rating  
Health hazard: 2  
Flammability: 0  
Physical Hazard: 0
Section 16. Other Information

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.

REVISION DATE: 7/8/2015