1. Identification

Product Name: Sodium Citrate Dihydrate

Cat No.: S279-3; S279-10; S279-10LC; S279-50; S279-50KB; S279-275LB; S279-500; S279-500LC;

Synonyms: 2-Hydroxy-1,2,3-Propanetricarboxylic Acid Trisodium Salt; Citric Acid Trisodium Salt Dihydrate

Recommended Use: Laboratory chemicals.

Uses advised against: No Information available

Details of the supplier of the safety data sheet:

Company: Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number:
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification:

Based on available data, the classification criteria are not met

Label Elements:
None required

Hazards not otherwise classified (HNOC):
None identified

3. Composition / information on ingredients

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrate, sodium, dihydrate</td>
<td>6132-04-3</td>
<td>100</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>68-04-2</td>
<td>-</td>
</tr>
</tbody>
</table>

4. First-aid measures
Eye Contact  Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if symptoms occur.

Skin Contact  Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation  Move to fresh air. Get medical attention immediately if symptoms occur.

Ingestion  Do not induce vomiting. Get medical attention immediately if symptoms occur.

Most important symptoms/effects  No information available.
Notes to Physician  Treat symptomatically

5. Fire-fighting measures

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

Unsuitable Extinguishing Media  No information available

Flash Point  No information available
Method -  No information available

Autoignition Temperature  345 °C / 653 °F
Explosion Limits  
Upper  No data available
Lower  No data available

Sensitivity to Mechanical Impact  No information available
Sensitivity to Static Discharge  No information available

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Dust can form an explosive mixture in air. Fine dust dispersed in air may ignite.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO₂) Sodium oxides

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA
Health 0  Flammability 0  Instability 0  Physical hazards N/A

6. Accidental release measures

Personal Precautions  Ensure adequate ventilation. Avoid dust formation. Avoid contact with the skin and the eyes. Use personal protective equipment as required.

Environmental Precautions  No special environmental precautions required. See Section 12 for additional ecological information.

Methods for Containment and Clean Up  Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling  Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage  Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection
Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures

Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection
Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA’s eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection
Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection
No protective equipment is needed under normal use conditions.

Hygiene Measures
Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Appearance</td>
<td>White</td>
</tr>
<tr>
<td>Odor</td>
<td>Odorless</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No information available</td>
</tr>
<tr>
<td>pH</td>
<td>7.0 - 9.0 5% aq. solution</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>300 °C / 572 °F</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>No information available</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No information available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Upper</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No information available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>No information available</td>
</tr>
<tr>
<td>Solubility</td>
<td>Soluble in water</td>
</tr>
<tr>
<td>Partition coefficient; n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>345 °C / 653 °F</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>&gt; 230°C</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular Formula</td>
<td>C6 H5 Na3 O7 · 2 H2 O</td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>294.09</td>
</tr>
</tbody>
</table>

10. Stability and reactivity

Reactive Hazard
None known, based on information available

Stability
Stable under normal conditions.

Conditions to Avoid

Incompatible Materials
Strong oxidizing agents, Strong reducing agents, Acids, Bases

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO2), Sodium oxides

Hazardous Polymerization
Hazardous polymerization does not occur.

Hazardous Reactions
None under normal processing.
11. Toxicological information

Acute Toxicity

Product Information
Component Information

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral</th>
<th>LD50 Dermal</th>
<th>LC50 Inhalation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrate, sodium, dihydrate</td>
<td>LD50 = 5400 mg/kg (Mouse) (OECD 401)</td>
<td>LD50 = &gt; 2000 mg/kg (Rat) (OECD 402)</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Toxicologically Synergistic Products

Delays and immediate effects as well as chronic effects from short and long-term exposure

Irritation

No information available

Sensitization

No information available

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrate, sodium, dihydrate</td>
<td>6132-04-3</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>68-04-2</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Mutagenic Effects

No information available

Reproductive Effects

No information available

Developmental Effects

No information available

Teratogenicity

No information available

STOT - single exposure

None known

STOT - repeated exposure

None known

Aspiration hazard

No information available

Symptoms / effects, both acute and delayed

No information available

Endocrine Disruptor Information

No information available

Other Adverse Effects

The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

<table>
<thead>
<tr>
<th>Component</th>
<th>Freshwater Algae</th>
<th>Freshwater Fish</th>
<th>Microtox</th>
<th>Water Flea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium citrate</td>
<td>EC50: 18000 - 32000 mg/L, 96h (Chlorella vulgaris)</td>
<td>LC50: 18000 - 32000 mg/L, 96h (Poecilia reticulata)</td>
<td>EC50: 1800 - 32000 mg/L, 8 h</td>
<td>EC50: 5600 - 10000 mg/L, 48h (Daphnia magna)</td>
</tr>
</tbody>
</table>

Persistence and Degradability

Soluble in water. Persistence is unlikely based on information available.

Bioaccumulation/ Accumulation

No information available.

Mobility

Will likely be mobile in the environment due to its water solubility.

13. Disposal considerations

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.
14. Transport information

<table>
<thead>
<tr>
<th>DOT</th>
<th>Not regulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDG</td>
<td>Not regulated</td>
</tr>
<tr>
<td>IATA</td>
<td>Not regulated</td>
</tr>
<tr>
<td>IMDG/IMO</td>
<td>Not regulated</td>
</tr>
</tbody>
</table>

15. Regulatory information

All of the components in the product are on the following Inventory lists:  X = listed

### International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>IECSC</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrate, sodium, dihydrate</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>200-675-3</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
</tr>
</tbody>
</table>

**Legend:**

- X - Listed
- E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
- F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
- N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
- P - Indicates a commenced PMN substance
- R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
- S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
- T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
- XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).
- Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
- Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

### U.S. Federal Regulations

- **TSCA 12(b)**: Not applicable
- **SARA 313**: Not applicable
- **SARA 311/312 Hazard Categories**
  - Acute Health Hazard: No
  - Chronic Health Hazard: No
  - Fire Hazard: No
  - Sudden Release of Pressure Hazard: No
  - Reactive Hazard: No
- **CWA (Clean Water Act)**: Not applicable
- **Clean Air Act**: Not applicable
- **OSHA** (Occupational Safety and Health Administration): Not applicable
- **CERCLA**: Not applicable
- **California Proposition 65**: This product does not contain any Proposition 65 chemicals
- **U.S. State Right-to-Know Regulations**: Not applicable
- **U.S. Department of Transportation**: Not applicable
Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade
No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class
Non-controlled

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date
09-Dec-2009
Revision Date
11-Jul-2016
Print Date
11-Jul-2016

Revision Summary
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS