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;

CAS-No: 6132-04-3

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

Recommended Use: Laboratory chemicals.

Uses advised against: Food, drug, pesticide or biocidal product use.

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:

This chemical is not considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label Elements:
None required

Hazards not otherwise classified (HNOC):
None identified

3. Composition/Information on Ingredients
### Sodium Citrate Dihydrate

<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
Remove 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 and effects
No information available.

#### Notes to Physician
Treat symptomatically

### 5. Fire-fighting measures

#### Suitable Extinguishing Media
Water spray, carbon dioxide (CO2), dry chemical, alcohol-resistant foam.

#### Unsuitable Extinguishing Media
No information available

- **Flash Point Method**
  - No information available

- **Autoignition Temperature**
  - 345 °C / 653 °F

#### Explosion Limits

<table>
<thead>
<tr>
<th></th>
<th>Upper</th>
<th>Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity to Mechanical Impact</td>
<td>No data available</td>
<td>No data available</td>
</tr>
<tr>
<td>Sensitivity to Static Discharge</td>
<td>No data available</td>
<td>No data available</td>
</tr>
</tbody>
</table>

#### Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Dust can form an explosive mixture with 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

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Flammability</th>
<th>Instability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 6. Accidental release measures

#### Personal Precautions
Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin and 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: Sweep up and shovel into suitable containers for disposal. Avoid dust formation.

7. Handling and storage

Handling: Ensure adequate ventilation. Avoid contact with skin, eyes or 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>No information available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No information available</td>
</tr>
<tr>
<td>Flammability or explosive limits</td>
<td>No data available</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**  

<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>
<tr>
<td>Sodium citrate</td>
<td>5400 mg/kg (Mouse)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

**Toxicologically Synergistic Products**  
No information available

**Delayed 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**  
.
### Sodium Citrate Dihydrate

<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 - 3200 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

#### United States of America Inventory

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>TSCA</th>
<th>TSCA Inventory notification - Active/Inactive</th>
<th>TSCA - EPA Regulatory Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citrate, sodium, dihydrate</td>
<td>6132-04-3</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>68-04-2</td>
<td>X</td>
<td>ACTIVE</td>
<td>-</td>
</tr>
</tbody>
</table>

**Legend:**
- **TSCA** - Toxic Substances Control Act, (40 CFR Part 710)
- **X** - Listed
- ‘-’ - Not Listed

**TSCA 12(b) - Notices of Export**
Not applicable

#### International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>DSL</th>
<th>NDSL</th>
<th>EINECS</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>6132-04-3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
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<td>X</td>
<td></td>
<td>KE-20843</td>
</tr>
<tr>
<td>Sodium citrate</td>
<td>68-04-2</td>
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<td>-</td>
<td>200-675-3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>KE-20843</td>
</tr>
</tbody>
</table>

#### U.S. Federal Regulations

**SARA 313**
Not applicable

**SARA 311/312 Hazard Categories**
See section 2 for more information

**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
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

16. Other information

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

Creation Date
09-Dec-2009

Revision Date
17-Jan-2018

Print Date
17-Jan-2018

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