# Material Safety Data Sheet

## Citric acid monohydrate

## 1. PRODUCT AND COMPANY IDENTIFICATION

<table>
<thead>
<tr>
<th>Product Name</th>
<th>Citric acid monohydrate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Grade</td>
<td>SQ</td>
</tr>
<tr>
<td>Catalog Numbers</td>
<td>22595, 2259E</td>
</tr>
<tr>
<td>Synonyms</td>
<td>(Granular/Crystalline/Certified ACS/USP/EP/BP/JP)</td>
</tr>
<tr>
<td>Company Identification</td>
<td>Fisher Scientific</td>
</tr>
<tr>
<td></td>
<td>Part of Thermo Fisher Scientific</td>
</tr>
<tr>
<td></td>
<td>Thermo Fisher Scientific India Pvt. Ltd</td>
</tr>
<tr>
<td></td>
<td>403-404, B-wing, Delphi,</td>
</tr>
<tr>
<td></td>
<td>Hiranandani Business Park,</td>
</tr>
<tr>
<td></td>
<td>Powai (E), Mumbai 400076, INDIA.</td>
</tr>
</tbody>
</table>

For information, call: 022 – 6680 3001/2, Call India Toll Free – 1 800 209 7001  
Emergency Number: 022-66803004/14  
For CHEMTREC assistance, call: 800-424-9300 [International]  
For International CHEMTREC assistance, call: 703-527-3887 [International]

## 2. HAZARDS IDENTIFICATION

### WARNING!

<table>
<thead>
<tr>
<th>Emergency Overview</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causes severe eye irritation and possible burns. Irritating to respiratory system and skin.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Appearance</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>odorless</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Target Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes, Skin, Respiratory system, Blood, Liver, Central nervous system (CNS)</td>
</tr>
</tbody>
</table>

### Potential Health Effects

### Acute Effects

#### Principle Routes of Exposure

<table>
<thead>
<tr>
<th>Route</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyes</td>
<td>Causes severe eye irritation and possible burns.</td>
</tr>
<tr>
<td>Skin</td>
<td>Irritating to skin. May be harmful in contact with skin.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Irritating to respiratory system. May be harmful if inhaled.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.</td>
</tr>
</tbody>
</table>

### Chronic Effects

None known.

See Section 11 for additional Toxicological information.

### Aggravated Medical Conditions

No information available.
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Haz/Non-haz</th>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Citric acid monohydrate</td>
<td>5949-29-1</td>
<td>&gt;95</td>
</tr>
<tr>
<td></td>
<td>Citric acid</td>
<td>77-92-9</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. Immediate medical attention is required.
- **Skin Contact**: Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.
- **Inhalation**: Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.
- **Ingestion**: Do not induce vomiting. Obtain medical attention.
- **Notes to Physician**: Treat symptomatically.

5. FIRE-FIGHTING MEASURES

- **Flash Point**: 174°C / 345°F
- **Autoignition Temperature**: 345°C / 653°F
- **Explosion Limits**
  - **Upper**: No data available
  - **Lower**: No data available
- **Suitable Extinguishing Media**: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- **Unsuitable Extinguishing Media**: No information available.
- **Hazardous Combustion Products**: No information available.
- **Sensitivity to mechanical impact**: No information available.
- **Sensitivity to static discharge**: No information available.

6. ACCIDENTAL RELEASE MEASURES

- **Personal Precautions**: Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.
- **Environmental Precautions**: Should not be released into the environment.
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

Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on 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

Engineering Measures

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

Exposure Guidelines

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

NIOSH IDLH: Immediately Dangerous to Life or Health

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

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Solid

Appearance

White

Odor

odorless

Odor Threshold

No information available.

pH

2.2 0.1N in water

Vapor Pressure

No information available.

Vapor Density

No information available.

Viscosity

No information available.

Boiling Point/Range

No information available.

Melting Point/Range

135 - 152°C / 275 - 305.6°F

Decomposition temperature

> 170°C

Flash Point

174°C / 345°F

Evaporation Rate

No information available.

Specific Gravity

No information available.

Solubility

Soluble in water

Log Pow

No data available

Molecular Weight

210.15

Molecular Formula

C6 H8 O7 . H2 O

10. STABILITY AND REACTIVITY

Stability

Stable under normal conditions.

Conditions to Avoid


Incompatible Materials

Strong oxidizing agents
11. TOXICOLOGICAL INFORMATION

Acute Toxicity

LD50 Oral VALUE 11,700 mg/kg (rat)

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>Citric acid monohydrate</td>
<td>5.79 g/kg (Mouse)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
<tr>
<td>Citric acid</td>
<td>3000 mg/kg (Rat)</td>
<td>Not listed</td>
<td>Not listed</td>
</tr>
</tbody>
</table>

Irritation
Severe eye irritant; Irritating to respiratory system and skin

Toxicologically Synergistic Products
No information available.

Chronic Toxicity

Carcinogenicity
There are no known carcinogenic chemicals in this product

Sensitization
No information available.

Mutagenic Effects
No information available.

Reproductive Effects
No information available.

Developmental Effects
No information available.

Teratogenicity
No information available.

Other Adverse Effects
See actual entry in RTECS for complete information. The toxicological properties have not been fully investigated.

Endocrine Disruptor Information
No information available

12. ECOLOGICAL INFORMATION

Ecotoxicity
Do not empty into drains.

Persistence and Degradability
Readily biodegradable.

Bioaccumulation/ Accumulation
No information available
Thermo Fisher Scientific - Citric acid monohydrate

### Mobility

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid monohydrate</td>
<td>-1.72</td>
</tr>
<tr>
<td>Citric acid</td>
<td>-1.72</td>
</tr>
</tbody>
</table>

### 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

**DOT**
- Not regulated

**TDG**
- Not regulated

**IATA**
- Not regulated

**IMDG/IMO**
- Not regulated

### 15. REGULATORY INFORMATION

#### International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>TSCA</th>
<th>DSL</th>
<th>NDLS</th>
<th>EINECS</th>
<th>ELINCS</th>
<th>NLP</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>CHINA</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citric acid monohydrate</td>
<td>-</td>
<td>X</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Citric acid</td>
<td>X</td>
<td>X</td>
<td>-</td>
<td>201-069-1</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 Hazardous Categorization

- Acute Health Hazard: Yes
- Chronic Health Hazard: No
- Fire Hazard: No
- Sudden Release of Pressure Hazard: No
- Reactive Hazard: No

Clean Water Act
Not applicable

Clean Air Act
Not applicable

OSHA
Not applicable

CERCLA
Not Applicable

California Proposition 65
This product does not contain any Proposition 65 chemicals.

State Right-to-Know
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
Slight risk, Grade 1

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
D2B Toxic materials
16. OTHER INFORMATION

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

MSDS Creation Date: October 2013
Revision Date: October 2018

Disclaimer
The information provided on 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of MSDS