



Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 28-Oct-2009

Revision Date 26-Feb-2014

Revision Number 1

1. Identification

Product Name Citric acid anhydrous

Cat No. : A940-1, A940-250LB, A940-500, A952-50LB, A95-3, BP339-500

Synonyms 2-Hydroxy-1,2,3-propanetricarboxylic acid

Recommended Use Laboratory chemicals

Uses advised against No Information available

Details of the supplier of the safety data sheet

| | |
|---------------------|-----------------------------------|
| Company | Emergency Telephone Number |
| Fisher Scientific | CHEMTREC®, Inside the USA: 800- |
| One Reagent Lane | 424-9300 |
| Fair Lawn, NJ 07410 | CHEMTREC®, Outside the USA: 001- |
| Tel: (201) 796-7100 | 703-527-3887 |

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| | |
|--|------------|
| Serious Eye Damage/Eye Irritation | Category 2 |
| Specific target organ toxicity (single exposure) | Category 3 |
| Target Organs - Respiratory system. | |

Label Elements

Signal Word

Warning

Hazard Statements

Causes serious eye irritation

May cause respiratory irritation



Precautionary Statements

Prevention

Wash face, hands and any exposed skin thoroughly after handling

Wear eye/face protection

Avoid breathing dust/fume/gas/mist/vapors/spray

Use only outdoors or in a well-ventilated area

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Call a POISON CENTER or doctor/physician if you feel unwell

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

May form combustible dust concentrations in air

3. Composition / information on ingredients**Haz/Non-haz**

| Component | CAS-No | Weight % |
|-------------|---------|----------|
| Citric acid | 77-92-9 | >95 |

4. First-aid measures

| | |
|--|--|
| Eye Contact | Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention. |
| Skin Contact | Wash off immediately with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.. |
| Inhalation | Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.. |
| Ingestion | Do not induce vomiting. Obtain medical attention. |
| 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 | 345°C / 653°F |
| Method - | No information available. |
| Autoignition Temperature | 1000°C / 1832°F |
| Explosion Limits | |
| Upper | No data available |

| | |
|---|---------------------------|
| Lower | No data available |
| Oxidizing Properties | Not oxidising |
| Sensitivity to mechanical impact | No information available. |
| Sensitivity to static discharge | No information available. |

Specific Hazards Arising from the Chemical

Dust can form an explosive mixture in air. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products Carbon monoxide (CO), Carbon dioxide (CO₂).

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. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health
2

Flammability
1

Instability
0

Physical hazards
N/A

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. 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 | 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

| | |
|--------------------------------------|--|
| Exposure Guidelines | This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies. |
| Engineering Measures | Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. |
| 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 |
| Hygiene Measures | Handle in accordance with good industrial hygiene and safety practice |

9. Physical and chemical properties

| | |
|--|---------------------------|
| Physical State | Solid |
| Appearance | White |
| Odor | odorless |
| Odor Threshold | No information available. |
| pH | 1.7 (10 % Solution) |
| Melting Point/Range | 153°C / 307.4°F |
| Boiling Point/Range | No information available. |
| Flash Point | 345°C / 653°F |
| Evaporation Rate | Not applicable |
| Flammability (solid,gas) | No information available. |
| Flammability or explosive limits | |
| Upper | No data available |
| Lower | No data available |
| Vapor Pressure | No information available. |
| Vapor Density | Not applicable |
| Relative Density | No information available. |
| Solubility | Soluble in water |
| Partition coefficient; n-octanol/water | No data available |
| Autoignition Temperature | 1000°C / 1832°F |
| Decomposition temperature | No information available. |
| Viscosity | Not applicable |
| Molecular Formula | C6 H8 O7 |
| Molecular Weight | 192.13 |

10. Stability and reactivity

| | |
|----------------------------------|---|
| Reactive Hazard | None known, based on information available. |
| Stability | Stable under normal conditions. |
| Conditions to Avoid | Avoid dust formation. Incompatible products. Excess heat. Temperatures above 170°C. |
| Incompatible Materials | Strong oxidizing agents, Strong bases |
| Hazardous Decomposition Products | Carbon monoxide (CO), Carbon dioxide (CO ₂) |
| Hazardous Polymerization | Hazardous polymerization does not occur. |
| Hazardous Reactions | None under normal processing. |

11. Toxicological information

Acute Toxicity

Product Information

Component Information

| Component | LD50 Oral | LD50 Dermal | LC50 Inhalation |
|-------------|--------------------|-----------------|-----------------|
| Citric acid | 3000 mg/kg (Rat) | >2 g/kg (Rat) | Not listed |

| | |
|--------------------------------------|---------------------------|
| Toxicologically Synergistic Products | No information available. |
|--------------------------------------|---------------------------|

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

| | |
|------------|---------------------|
| Irritation | Severe eye irritant |
|------------|---------------------|

Sensitization No information available.

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

| Component | CAS-No | IARC | NTP | ACGIH | OSHA | Mexico |
|-------------|---------|------------|------------|------------|------------|------------|
| Citric acid | 77-92-9 | Not listed | Not listed | Not listed | Not listed | Not listed |

Mutagenic Effects No information available.

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system.

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

12. Ecological information

Ecotoxicity

| Component | Freshwater Algae | Freshwater Fish | Microtox | Water Flea |
|-------------|------------------|---|---|---------------------|
| Citric acid | Not listed | Leuciscus idus: LC50 = 440-760 mg/L/96h | Photobacterium phosphoreum: EC50 = 14 mg/L/15 min | EC50 = 120 mg/L/72h |

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.

| Component | log Pow |
|-------------|---------|
| Citric acid | -1.72 |

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

14. Transport information

| | |
|-----------------|---------------|
| <u>TDG</u> | Not regulated |
| <u>IATA</u> | Not regulated |
| <u>IMDG/IMO</u> | Not regulated |

15. Regulatory information

International Inventories

| Component | TSCA | DSL | NDSL | EINECS | ELINCS | NLP | PICCS | ENCS | AICS | CHINA | KECL |
|-------------|------|-----|------|-----------|--------|-----|-------|------|------|-------|------|
| Citric acid | X | X | - | 201-069-1 | - | | X | X | X | X | X |

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.

S - 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 Occupational Safety and Health Administration
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**

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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 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 SDS