

Material Safety Data Sheet

Effective Date: 01-31-11

I. CHEMICAL PRODUCT

Product: Citric Acid Solution (Catalog Numbers: S0100)
 Synonyms: 2-Hydroxy-1,2,3 Propanetricarboxylic Acid, Aqueous Solution, 2-Hydroxy-1,2,3 Propanetricarboxylic Acid Solution

General Use: Not applicable

EMERGENCY NUMBER (SPILLS, EXPOSURES): Company: 716-731-5567
 CHEMTREC: 800-424-9300

II. COMPOSITION / INFORMATION ON INGREDIENTS

| Hazardous Ingredient(s) | Formula | Mole Weight | CAS No | EC No | Index No | Percent | Hazardous |
|-------------------------|----------------------------------------------|-------------|-----------|-----------|--------------|---------|-----------|
| Citric acid | C ₆ H ₈ O ₇ | 210.14 | 5949-29-1 | 201-069-1 | 011-002-00-6 | 10-50% | Yes |
| Phosphoric Acid | H ₂ O | 18.00 | 7732-18-5 | 231-791-2 | | 90-50% | Yes |

III. HAZARDS IDENTIFICATION

DANGER! CAUSES EYE, SKIN AND RESPIRATORY TRACT IRRITATION OR BURNS. MAY CAUSE ALLERGIC SKIN SENSITIZATION REACTION!

Emergency Overview

OSHA Hazards: Irritant

HMIS Classification

Health hazard: 2

Flammability: 0

Physical hazards: 0

Potential Health Effects

Inhalation: May be harmful. Causes respiratory tract irritation.

Skin: May be harmful. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful.

IV. FIRST AID MEASURES

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 10 minutes. Assure adequate flushing by separating the eyelids with fingers. Consult a physician

Skin: In case of skin contact take off contaminated clothing and shoes immediately, wash with soap and plenty of water. Consult a physician.

Ingestion: If person is conscious and can swallow, give two glasses of water (16 oz.), but do not induce vomiting. If vomiting occurs, give water again. Have medical personnel determine if evacuation of stomach or induction of vomiting is necessary. Do not give anything by mouth to an unconscious or convulsing person. Consult a physician.

Inhalation: If inhaled remove to fresh air. Get medical attention if breathing becomes difficult or respiratory irritation persists. Consult a physician.

V. FIRE FIGHTING MEASURES

Extinguishing media: Water spray. Carbon dioxide, dry chemical powder or appropriate foam.

Decomposition products: Carbon monoxide, carbon dioxide



| | |
|----------------------------|--------------------------------------------------------------------------------------------------------|
| General hazards: | Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. |
| Explosions hazards: | N/A |
| NFPA rating: | Health: 2 Flammability: 0 Reactivity: 0 |

VI. ACCIDENTAL RELEASE MEASURES

| | |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Personal precautions: | Wear appropriate personal protective equipment to minimize direct contact with skin or eyes and prevent inhalation of vapors, mist or gas. |
| Environmental precautions: | Close all the drains. |
| Clean up methods: | Soak up with suitable absorbent material and place in a bag and hold for waste disposal. Prevent splashing and wash the site after material completely removed. |

VII. HANDLING AND STORAGE

| | |
|------------------|-----------------------------------------------------------------------------------------------------------------------|
| Handling: | Avoid prolonged / repeated exposure. Avoid inhalation of vapor or mist, contact with eyes, skin and clothing. |
| Storage: | Well ventilated area, room temperature and keep tightly closed. Containers must be opened carefully and kept upright. |

VIII. EXPOSURE CONTROLS / PERSONAL PROTECTION

Contains no materials with exposure limit values.

Exposure control: Safety shower and eye bath. Mechanical exhaust. Wash thoroughly after handling.

Personal protective equipment:

Respiratory: Appropriate NIOSH type N95 (US), or P1 (EN 143) or better dust mask may be worn up as a back up to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Eye: Chemical safety goggles or full facefield where splashing is possible.

Hand: Chemical resistant gloves.

Skin: Choose body protection according to concentration / amount. Wear imprevios protective clothing including shoes, lab coat, apron, or coveralls.

IX. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|----------------------------------|-------------------------------|
| Appearance: | Colorless or yellowish liquid |
| Odor: | Odorless to faint sugar odor |
| Solubility in water: | Soluble |
| Density: | 1.05 to 1.3 gm/cc |
| pH: | > 14.0 |
| Boiling point: | > 100°C |
| Melting point: | < 0°C |
| Flash point: | N/A |
| Flammability: | N/A |
| Autoignition temperature: | N/A |

X. STABILITY AND REACTIVITY

| | |
|------------------------------------------|----------------------------------------------------|
| Stability: | Stable under ordinary conditions of use / storage. |
| Incompatibility: | Oxidising agents, bases reducing agnets, nitrates. |
| Hazardous decomposition products: | Carbon monoxide, carbon dioxide. |
| Hazardous polymerization: | Not applicable. |

XI. TOXICOLOGICAL INFORMATION

| | |
|------------------------|------------------------------------------|
| Acute toxicity: | Intraperitoneal (LD50): 375 mg/kg [Rat]. |
|------------------------|------------------------------------------|



Chronic exposure: No component of this product present at levels greater than 0.1% identified as probable or confirmed carcinogen by IARC, ACGIH, NTP and OSHA.

Route of exposure: Skin Contact: Maybe harmful if absorbed by the skin and cause skin irritation.
Eye Contact: Causes eye irritation.
Inhalation: Material may be irritating to mucous membranes and upper respiratory tract.
Prolonged or repeated exposure may cause allergic reactions in certain individuals.
Ingestion: May be harmful if swallowed.

XII. ECOLOGICAL INFORMATION

Water/AIR Pollution: Data not yet available.
Biodegradability: Data not yet available.

XIII. DISPOSAL CONSIDERATIONS

Waste Disposal Method: Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a mild base to neutralize and dispose in liquid form. Observe all federal, state and local regulations for disposal.

Container Disposal: Observe all federal, state and local environmental regulation.

XIV. TRANSPORT INFORMATION

DOT: Not a dangerous good.
IATA: Not a dangerous good.

XV. REGULATORY INFORMATION

U.S. Regulatory Information: SARA Listed: Acute Health Hazard (311/312 Hazards)
TSCA Inventory Item: Yes
OSHA Hazards: Irritant

Canada Regulatory Information: WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

XVI. OTHER INFORMATION

The information presented in this Material Safety Data Sheet is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide for safety precautions. It does not relate to use in combination with any material or process. The data does not reflect a guarantee of any product properties.