



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.20

Section 1 - Product and Company Information

Product Name CITRIC ACID FREE ACID ANHYDROUS CRYSTALLINE
Product Number C0759
Brand Sigma Chemical

Company Sigma-Aldrich
Street Address 3050 Spruce Street
City, State, Zip, Country SAINT LOUIS, MO 63103 US
Technical Phone: 314 771 5765
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Emergency Phone: 414 273 3850 Ext. 5996

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
CITRIC ACID ANHYDROUS	77-92-9	No

Formula C6H8O7
Synonyms Aciletten, Anhydrous citric acid, Citretten, Citric acid, anhydrous, Citro, 2-Hydroxy-1,2,3-propanetricarboxylic acid, beta-Hydroxytricarballic acid, Kyselina citronova (Czech), Kyselina 2-hydroxy-1,2,3-propantrikarbonova (Czech), NSC 30279, 1,2,3-Propanetricarboxylic acid, 2-hydroxy-

Section 3 - Hazards Identification

Emergency Overview
Irritant.
Risk of serious damage to eyes. Irritating to respiratory system and skin.
Possible sensitizer.

HMS Rating
Health: 2 Flammability: 0 Reactivity: 0

NFPA Rating
Health: 2 Flammability: 0 Reactivity: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure
In case of contact, immediately wash skin with soap and copious amounts of water.

Eye Exposure
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

Explosion Data
Dust Potential
This material, like most materials in powder form, is capable of creating a dust explosion.

Explosion Limits: Lower: 8 %

Autoignition Temp: N/A

Extinguishing Media
Suitable
Water spray, Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting
Protective Equipment
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s)
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedure(s) of Personal Precaution(s)
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling
User Exposure
Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage
Suitable
Keep tightly closed. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

Engineering Controls
Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment
Respiratory
Government approved respirator.
Hand
Compatible chemical-resistant gloves.
Eye
Chemical safety goggles.

General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	
Physical State	Solid
Molecular Weight:	192.12 AMU
pH	N/A
BP/BP Range	N/A
MP/MP Range	155 - 157 °C
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	N/A
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A
Explosion Limits	Lower: 8 %
Flammability	N/A
Autoignition Temp	N/A
Solubility	N/A

65 °C

N/A = not available

Section 10 - Stability and Reactivity

Stability
Stable
Stable.
Materials to Avoid
Oxidizing agents, Bases, Reducing agents, Nitrates.

Hazardous Decomposition Products
Hazardous Decomposition Products
Carbon monoxide, Carbon dioxide.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure
Skin Contact
Causes skin irritation.
Skin Absorption
May be harmful if absorbed through the skin.
Eye Contact
Causes severe eye irritation.
Inhalation
Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion
May be harmful if swallowed.
Sensitization
Sensitization
Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Signs and Symptoms of Exposure
Exposure can cause: Vomiting, Diarrhea, Damage to tooth enamel, Dermatitis. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: GE7350000

Toxicity Data

Oral - Rat: 3,000 mg/kg (LD50)
Intraperitoneal - Rat: 290 MG/KG (LD50)
Subcutaneous - Rat: 5500 MG/KG (LD50)
Remarks: Lungs, Thorax, or Respiration:Other changes.
Other changes
Oral - Mouse: 5,040 mg/kg (LD50)
Remarks: Lungs, Thorax, or Respiration:Other changes.
Other changes
Intraperitoneal - Mouse: 903 MG/KG (LD50)
Subcutaneous - Mouse: 2700 MG/KG (LD50)
Remarks: Lungs, Thorax, or Respiration:Other changes.
Other changes
Intravenous - Mouse: 42 MG/KG (LD50)
Remarks: Behavioral:Convulsions or effect on seizure threshold.
Lungs, Thorax, or Respiration:Cyanosis.
Gastrointestinal:Changes in structure or function of salivary glands.
Intravenous - Rabbit: 330 MG/KG (LD50)
Remarks: Behavioral:Convulsions or effect on seizure threshold.
Lungs, Thorax, or Respiration:Cyanosis.
Gastrointestinal:Changes in structure or function of salivary glands.

Irritation Data

Skin - Rabbit: 500 mg 24H
Remarks: Mild irritation effect
Eyes - Rabbit: 0.75 mg 24H
Remarks: Severe irritation effect

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation

Contact a licensed professional waste disposal service to dispose of this material.
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None

Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xi

Indication of Danger

Irritant.

Risk Statements R: 37/38 41

Irritating to respiratory system and skin. Risk of serious damage to eyes.

Safety Statements S: 26 36/37/39

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection.

US Classification and Label Text

Indication of Danger

Irritant.

Risk Statements

Risk of serious damage to eyes. Irritating to respiratory system and skin.

Safety Statements

In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing.

US Statements

Possible sensitizer.

United States Regulatory Information

SARA Listed: No

TSCA Inventory Item: Yes

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

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2003 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.