Citric acid

Safety Data Sheet

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1. IDENTIFICATION

Product identifier

Product code: CG6002
Product Name: Citric acid

Other means of identification

Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid
CAS #: 77-92-9
RTECS # GE7350000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier:

DAWN SCI
121 Liberty street Metuchen, NJ 08840
T: 732-902-6300, F : 973-802-1005
www.dawnsci.com | care@dawnsci.com

Emergency telephone number

Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Classification

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

Considered a dangerous substance or mixture according to the Globally Harmonized System (GHS)

Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Label elements

Warning

Hazard statements
Causes serious eye irritation
May cause respiratory irritation

Hazards not otherwise classified (HNOC)
Not Applicable

Other hazards
May be harmful if swallowed
Causes mild skin 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

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.
If skin irritation occurs: Get medical advice/attention
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %
Citric Acid, Anhydrous	77-92-9	100

4. FIRST AID MEASURES

First aid measures

General Advice: National Capital Poison Center in the United States can provide assistance if you have a poison emergency and need to talk to a poison specialist. Call 1-800-222-1222.

Skin Contact: Wash off immediately with soap and plenty of water removing all contaminated clothing and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact: Flush eyes with water for 15 minutes. Get medical attention.

Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms

Causes eye irritation
Mild skin irritation
May cause irritation of respiratory tract
Central nervous system effects
May affect the cardiovascular system
May affect respiration

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically.

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste.

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO2). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon oxides

Hazardous Combustion Products: No information available.

Specific hazards: May be combustible at high temperatures. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:
Provide sufficient air exchange and/or exhaust in work rooms. Keep away from incompatible materials.

Safe Handling Advice
Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:
Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:
Oxidizing agents
Reducing agents
Bases
Bicarbonates
Acetates
Sulfides
Potassium Tartrate
metal nitrates
Metals
Aluminum
Copper
Copper alloys
Zinc
zinc alloys
aluminum alloys
Alkaline earth carbonates
alkali earth carbonates

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	CAS-No.	OSHA	NIOSH	ACGIH	AIHA WEEL
Citric Acid, Anhydrous	77-92-9	None	None	None	None

Canada

Components	CAS-No.	Canada - Alberta	Canada - British Columbia	Canada - Ontario	Canada - Quebec
Citric Acid, Anhydrous	77-92-9	None	None	None	None

Australia and Mexico

Components	CAS-No.	Australia	Mexico
Citric Acid, Anhydrous	77-92-9	None	None

Appropriate engineering controls

Engineering measures to reduce exposure: Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

Eye protection: Goggles or Safety glasses with side-shields

Skin and body protection: Long sleeved clothing
Chemical resistant apron
Gloves

Respiratory protection: Effective dust mask. Use a dust respirator under conditions where exposure to the substance is apparent (e.g. generation of high concentration of dust (dust clouds) , inadequate ventilation, development of respiratory tract irritation), and engineering controls are not feasible. Be sure to use an approved/certified respirator or equivalent.

Hygiene measures: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:
Solid

Appearance:
Powder. Granular.

Color:
Colorless. White.

Odor:
Odorless.

Taste
Acid. Strong.

Formula:
C6H8O7

Molecular/Formula weight (g/mole):
192.13

Flammability:
No information available

Flashpoint (°C/°F):
No information available.

Flash Point Tested according to:
Not available

Autoignition Temperature (°C/°F):
1010°C/1850°F (poudre)

Lower Explosion Limit (%):
0.28 kg/m^3 (poussière)

Upper Explosion Limit (%):
2.29 kg/m^3 (poussière)

Melting point/range(°C/°F):
153.0°C/307.4°F

Decomposition temperature(°C/°F):
No information available

Boiling point/range(°C/°F):
se dégrade

Bulk density:
No information available

Density (g/cm3):
No information available

Specific gravity:
1.665

pH:
No information available

Vapor pressure @ 20°C (kPa):
No information available

Evaporation rate:
No information available

Vapor density:
No information available

VOC content (g/L):
No information available

Odor threshold (ppm):
No information available

Partition coefficient (n-octanol/water):
-1.64

Viscosity:
No information available

Miscibility:
No information available

Solubility:
Soluble in Water
Solubility in water: 54.0% w/w at 10 deg C; 59.2% at 20 deg C; 64.3% at 30 deg C; 68.6% at 40 deg C; 70.9% at 50 deg C; 73.5% at 60 deg C; 76.2% at 70 deg C; 78.8% at 80 deg C; 81.4% at 90 deg C; 84.0% at 100 deg C., 3.83X10+5 mg/L at 25 deg C.
Very soluble in Ethanol
Soluble in Ether
Soluble in ethyl acetate
Insoluble in Benzene
Insoluble in Chloroform

10. STABILITY AND REACTIVITY

Reactivity
Reacts with strong bases
Reactive with oxidizing agents
Reacts with reducing agents
Potentially explosive reaction with metal nitrates

Chemical stability

Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid: Heat. Ignition sources. Incompatible materials. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Incompatible Materials:
Oxidizing agents
Reducing agents
Bases

Bicarbonates
Acetates
Sulfides
Potassium Tartrate
metal nitrates
Metals
Aluminum
Copper
Copper alloys
Zinc
zinc alloys
aluminum alloys
Alkaline earth carbonates
alkali earth carbonates

Hazardous decomposition products: Carbon oxides.

Other Information
Corrosivity: Corrosive in presence of aluminum, zinc, copper and their alloys

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Citric Acid, Anhydrous	
CAS-No.	77-92-9

LD50/oral/rat = = 3 g/kg Oral LD50 Rat = 3000 mg/kg Oral LD50 Rat
LD50/oral/mouse = 5040 mg/kg Oral LD50 Mouse
LD50/dermal/rabbit = No information available
LD50/dermal/rat = No information available
LC50/inhalation/rat = No information available
LC50/inhalation/mouse = No information available
Other LD50 or LC50information = 903 mg/kg, intraperitoneal, mouse;
290 mg/kg, intraperitoneal, rat;
42 mg/kg, intravenous, mouse;
330 mg/kg, intravenous, rabbit;
2700 mg/kg, subcutaneous, mouse;
5500 mg/kg, subcutaneous, rat

Product Information

LD50/oral/rat =
VALUE- Acute Tox Oral = 3000 mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 5040 mg/kg

LD50/dermal/rabbit
VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat
VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat
VALUE-Vapor = No information available
VALUE-Gas = No information available
VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse
VALUE-Vapor = No information available
VALUE - Gas = No information available
VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Mild skin irritation.

Eye Contact: Causes serious eye irritation. Highly irritating.

Inhalation Irritating to respiratory system. Symptoms may including coughing.

Ingestion Causes gastrointestinal (digestive) tract irritation with nausea, vomiting, and diarrhea. May affect behavior/central nervous system (convulsions, somnolence), and respiration. May affect behavior/central nervous system (ataxia). May affect behavior/central nervous system (tremor, convulsions). May affect respiration (respiratory depression). May affect the cardiovascular system (change in heart rate). May affect the cardiovascular system (hypotension). May cause metabolic acidosis. May cause hypocalcemia. May cause lactic acidosis. May cause hyperkalemia.

Aspiration hazard No information available.

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

Chronic Toxicity Frequent intake of citrated beverages may cause erosion of dental enamel and irritation of the mucous membrane lining of the mouth (oral mucosa).

Sensitization: No information available.

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic.

Components	CAS-No.	IARC	ACGIH - Carcinogens	NTP	OSHA HCS - Carcinogens	Australia - Notifiable Carcinogenic Substances	Australia - Prohibited Carcinogenic Substances
Citric Acid, Anhydrous	77-92-9	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

ACGIH (American Conference of Governmental Industrial Hygienists)

IARC (International Agency for Research on Cancer)

NTP (National Toxicology Program)

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure Respiratory system.
STOT - repeated exposure No information available.
Target Organs: Respiratory system.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Ecotoxicity effects: Aquatic environment.

Citric Acid, Anhydrous - 77-92-9
Freshwater Fish Species Data: 1516 mg/L LC50 Lepomis macrochirus 96 h static 1
Water Flea Data: 120 mg/L EC50 Daphnia magna 72 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:
Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:
Empty containers should be taken for local recycling, recovery or waste disposal

Components	CAS-No.	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Citric Acid, Anhydrous	77-92-9	None	None	None	None

14. TRANSPORT INFORMATION

DOT
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Class No information available
Packing group: No information available
Emergency Response Guide Number No information available
Marine Pollutant No data available

DOT RQ (lbs): No information available
Special Provisions No Information available
Symbol(s): No information available
Description: No information available

TDG (Canada)
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant No Information available
Description: No information available

ADR
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Packing Group: No information available
Subsidiary Risk: No information available

IMO / IMDG
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Marine Pollutant No information available

RID
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

ICAO
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available

IATA
UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
ERG Code: No information available
Special Provisions No information available

15. REGULATORY INFORMATION

International Inventories

Components	CAS-No.	U.S. TSCA	KOREA KECL	Philippines	Japan ENCS	CHINA	Australia	EINECS-No.

				(PICCS)			(AICS)	
Citric Acid, Anhydrous	77-92-9	PresentACTIVE	Present KE-20831	Present	Present (2)-1318	Present[25349]	Present	Present 201-069-1

U.S. Regulations

Citric Acid, Anhydrous

FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1033

FDA - 21 CFR - Total Food Additives 131.111, 131.112, 133.123, 133.124, 133.129, 133.169, 133.173, 133.178, 133.179, 145.134, 145.145, 146.187, 150.141, 150.161, 155.130, 161.190, 163.11, 163.110, 163.112, 169.115, 169.140, 169.150, 172.755, 172.861, 173.160, 173.165, 173.280, 178.1010, 184.1033, 73.85

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:
This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	CAS-No.	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Citric Acid, Anhydrous	77-92-9	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CAS-No.	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting de minimis
Citric Acid, Anhydrous	77-92-9	None	None	None	None	None

U.S. TSCA

Components	CAS-No.	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Citric Acid, Anhydrous	77-92-9	Not Applicable	Not Applicable

Canada

WHIMIS 2015 - GHS Classifications

WHMIS 2015 Hazard Classification Information: .

Component
Citric Acid, Anhydrous
77-92-9 (100)

WHMIS 2015 Hazard Classification
Serious Eye Damage/Eye Irritation - Category 2: H319 Causes serious eye irritation.; Combustible Dust - Category 1: May form combustible dust concentrations in air (factors such as combustibility and explosiveness of dusts including composition and shape and size of particles could cause substance to belong to 'Combustible dust' hazard class)

Canada Hazardous Products Regulation This product has been classified according to the hazard criteria of the HPR (Hazardous Products Regulation) and the SDS contains all of the information required by the HPR

WHMIS 1988 Hazard Class
E Corrosive material

Components	WHMIS 1988
Citric Acid, Anhydrous	E including 40%

Canada Controlled Products Regulation:
This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	**WHMIS Ingredient Disclosure List -**
Citric Acid, Anhydrous	1 %

Inventory

Components	CAS-No.	Canada (DSL)	Canada (NDSL)
Citric Acid, Anhydrous	77-92-9	Present	Not Listed

Components	CAS-No.	CEPA Schedule I - Toxic Substances
Citric Acid, Anhydrous	77-92-9	Not listed
Components	CAS-No.	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Citric Acid, Anhydrous	77-92-9	Not listed

EU Classification

EU GHS - SV - CLP 1272/2008

Components	CAS-No.	EU GHS - SV - CLP (1272/2008)
Citric Acid, Anhydrous	77-92-9	No information

EU - CLP (1272/2008)

R-phrase(s)
R36 - Irritating to eyes.
R37 - Irritating to respiratory system.
R38 - Irritating to skin.

S -phrase(s)
S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37 - Wear suitable gloves.
S39 - Wear eye/face protection.

Components	CAS-No.	**Classification**	**Concentration Limits:**	**Safety Phrases**
Citric Acid, Anhydrous	77-92-9		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:
Xi - Irritant.

16. OTHER INFORMATION

Revision Date: -

Prepared by: -

SDS US Dawn sci

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