



Aqua Chemical Supply, Inc.

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1. PRODUCT AND COMPANY IDENTIFICATION

Product name Citric Acid, Anhydrous, FCC, USP
IUPAC name 2-Hydroxy-1, 2, 3-propanetricarboxylic acid or 2-hydroxypropane-1, 2, 3-tricarboxylic acid
Synonyms 2-Hydroxy-1, 2, 3-propanetricarboxylic acid or 2-hydroxypropane-1, 2, 3-tricarboxylic acid
Chemical formula C₆H₈O₇
CAS - N° 77-92-9
EC N° 201-069-1

Relevant identified uses of the substance Citric acid can be used in food as food additives and also in technical application as clarifying agent, water softener, buffer, foam booster and stabilizer, complexion agent and as an intermediate in production of and uses advised against organic chemicals, cosmetic products, cleaning products, nontoxic plastics, plasticizer for not toxic plastics, petrochemical industry, building industry, chelated fertilizers, citric acid derivate and pharmaceutical ingredients.

Manufacturer/Supplier/Distributor: Univar USA Inc., 17425 NE Union Hill Rd., Redmond WA 98052

Emergency telephone number: For emergency assistance involving chemicals call
CHEMTREC day or night at: 1-800-424-9300

2. HAZARDS IDENTIFICATION

Global Harmonization System - GHS Eye irritant - Category 2 (2A-2B).
Classification regulation (EC) N° 1272/2008 Eye irritant - Category 2, Hazard Statement H319.

Precautionary statements - prevention: Wash the body parts to be washed after handling.
Wear protective gloves / protective clothing / protective equipment for eye / face.
In case of contact with eyes, rinse with water for several minutes. Remove contact lenses when present and can be done carefully. Continue rinsing.

Precautionary statements - response: If eye irritation perseveres visit preferably an ophthalmologist.

Precautionary statements - storage /handling Avoid breathing dust. Avoid contact with eyes and skin.

Precautionary statements - disposal Please note the local environmental legislation regarding the disposal for proper disposal.

Labeling according to regulation No
1272/2008



Labeling according to directive No
67/548/EEC or No 1999/45/EC



Phrase – R 36 Eye irritant.
Phrase – R 38 Skin irritant.
Phrase – S 24/25 Avoid contact with eyes and skin.
Phrase – S 26 In case of contact with eyes rinse immediately with plenty of water and consult an ophthalmologist as soon as possible.
Phrase – S28 In case of contact with skin rinse with plenty of water.

Phrase S – 36/37/38 mask.	Wear a suitable protective: clothing / gloves / goggles / disposable mask.
Other hazards	None known to date.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance name	Citric acid.
Chemical family	Organic acid.
Commercial name	Citric acid Anhydrous, citric acid.
CAS - N°	77-92-9
EINECS - N°	201-069-1
E - N°	E 330
EC - N°	201-069-1
Molar weight	192,13
Impurities	None known to date.

Composition

Citric Acid: NLT 99,5% and NMT 100,5% of $C_6H_8O_7$, on the anhydrous basis; Water: NMT 0,5% w/w

Hazardous components (according to regulation (EC No 1272/2008)

Citric Acid: NLT 99,5% and NMT 100,5% of $C_6H_8O_7$, on the anhydrous basis; CAS No: 77-92-9 Classification: Eye and Skin irritant, Category 2, H319.

Hazardous components (according to No 1999/45/EC)

Citric Acid: NLT 99,5% and NMT 100,5% of , $C_6H_8O_7$ on the anhydrous basis regulation CAS No: 77-92-9 Classification: Xi, irritant; R36

Composition comments: All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

Route(s) of entry Inhalation; skin, eye, ingestion.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

Acute inhalation If inhaled, remove to fresh air and call a physician for instructions. In case of difficulty breathing, use oxygen assistance. Get medical advice/attention if condition is critical.

Acute skin contact This product could be skin irritant resulting in reddening, stinging, and swelling when contact is frequent or skin sensible. Wash with plenty water. If condition is critical get medical advice/attention.

Acute eye contact This product is irritating to the eyes resulting in stinging, reddening, tearing and swelling. Wash with plenty water. 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.

Acute ingestion If swallowed, wash the mouth plenty of water and give potable water to drink. If person is unconscious DO NOT give anything to drink. DO NOT induce vomiting. Contact the local services for medical attention/advisers for instructions.

Medical conditions aggravated by exposure Persons with pre-existing eye or skin disorders may be more susceptible to the effects of this product.

First aid facilities Eyewash station with potable water should be available to rinse eyes or skin. Make available eyewash station and safety showers close to the work place.

5. FIRE FIGHTING MEASURES

Extinguishing media Water spray, carbon dioxide, and dry chemical powder.

Specific hazardous This is a solid organic acid and can burn under adequate temperature. High dust concentration would be hazardous in closed areas and direct flame. Burning of product could produce irritant/toxic fumes as monoxide or dioxide of carbon.

Personal protection Firemen should wear complete personal protection equipment, including portable self-contained breathing system.

6. ACCIDENTAL RELEASE MEASURES

Use proper personal protective equipment as indicated in Section 8.

Personal protection and caution Avoid dust formation. Ensure acceptable ventilation in the handling area. Wash the hands after use and remove contaminated clothing and wash before reuse.

Emergency procedures Avoid dust formation. Turn-off the electric and heat sources. Take precautionary measures against static discharges. Avoid contact with eyes and skin. Keep the people off of the emergency areas. Clean up the residues of material immediately and ensure adequate ventilation of affected areas.

Environmental precautions Avoid using water over spills or leaks. Spills or leaks may be neutralized carefully with lime. The waste disposal repeatedly product in water or air can cause damage to the environment. Avoid generating dusty due to a lot of fine particles in the air might cause explosion. During the handling of product eliminate all ignition sources. Dispose of in a manner consistent with your local legal regulations.

Methods and materials for containment Clean up spills immediately with a vacuum or sweep up material and place into a suitable disposal container. Provide adequate ventilation in the workplace and warehouse. Confining the contaminated areas and contain the spill into the containers and dispose the contaminated product according to the environmental legislation in your country.

7. HANDLING AND STORAGE

Handling precautions Wear security personal protective elements. Avoid dust formation. Take precautionary measures against static discharges. Wash the hands after use and remove contaminated clothing and wash before reuse. Avoid contact with eyes and skin. Store in a dry place away from sun light, excessive heat, in original or similar close containers. It is prohibited to eat, drink or smoke during the handling or working this product.

Conditions for safe storage Keep citric acid anhydrous tightly closed in a dry and cool place. Storage on pallets and away of water or high relative humidity. Avoid a direct or indirect sunlight and adverse weather conditions for product. Avoid air conveying of powdered product due to potential of static build up. After use reseal package immediately and keep in close container. Do not mix rests of product or lots.

Packaging material Polyethylene coated paper bags, Polyvinyl or polyethylene/propylene big bags.

Special sensitivity Keep away to direct or indirect sunlight, heat and adverse weather conditions.

Incompatible products Strong oxidizing agents, strong bases.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters None known to date. Recommended concentration of dust in the workplace less than 10 mg/m³. The concentration should be monitored in the work ambient and if the recommended exposure limit is exceeded, approved dust respirator should be worn.

Engineering controls Use local ventilation if dusting is a problem. To maintain air levels below the recommended exposure limit may be used mechanical ventilation.

Biological limit values None known to date. Biological limit allocated.

PERSONAL PROTECTION REQUIREMENTS

Eyes protection Chemical safety glasses.

Skin protection Rubber or vinyl gloves and long sleeved shirts and pants to minimize skin contact.

Respiratory protection Under recommended conditions of use, respirator protection is not required.

Hygiene rules Employees have been washing their hands and face after and before eating, drinking or using tobacco products in the workplace.

Clothing and footwear Coveralls, trousers, long sleeved shirt, closed in shoes and/or safety footwear.

Protective workplace Measures Emergency showers and eye wash stations should be made available. Educate and train employees in the safe use and handling of this product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical form	Crystals.
Appearance	Free flowing crystals or powder.
Color	White.
Taste	A strong acid taste.
Odor	Odorless or maple lactone odor.
Odor threshold	8 ppm (furfural alcohol as odor reference).
pH (1% w/v solution)	2,2
Boiling point	Not Applicable (173 °C decomposition of molecule).
Melting / freezing point	153 °C (with decomposition).
Solubility in water	59, 2 g/100g at (20°C), Soluble in water, alcohol and moderately
soluble in ether.	
Solubility (non-aqueous)	Methyl alcohol: 197g/100g at 19°C.
Partition coefficient	Not applicable.
Specific gravity / density	1,542 g/cm ³
Bulk density -typical-	897 kg/m ³ (granular product)
% Volatile by volume	Not Applicable.
Autoignition	1010 °C
Vapor pressure	Not Applicable.
10. STABILITY AND REACTIVITY	
Reactivity	This is a stable material.
Chemical stability	Complex could be occurred with metals.
Hazardous polymerization	It does not occur.
Incompatibilities	Reaction with caustic can create heat (exothermic reaction).
Solutions are mildly corrosive to carbon steel.	
Instability conditions	None known to date.
Decomposition products	In case of fire CO, CO ₂ and other potentially toxic fumes.
11. TOXICOLOGICAL INFORMATION	
Acute toxicity LD50	Not know to date.
Irritation and corrosivity	
Inhalation	Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.
Ingestion	Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Extremely large oral dosages may produce gastrointestinal disturbances. Calcium deficiency in blood may result in severe cases of ingestion.
Skin contact	Causes irritation to skin. Symptoms include redness, itching, and pain.
Eye contact	Highly irritating to the eyes, will cause tearing, stinging, blurred vision and redness.
Sensitization	Not sensitizing effect known.
Long term effects	Chronic or heavy acute ingestion may cause tooth enamel erosion. Prolonged or repeated skin contact may cause defatting, leading to dermatitis.
Chronic toxicity	
Mutagenicity	Is not required.
Carcinogenicity	None known to date.
Reproductive toxicity	Not applicable.
Specific target organ toxicity (STOT) - single exposure	Not applicable.
Specific target organ toxicity (STOT) - repeated exposure	Not applicable.
Aspiration hazard	Not applicable.
12. ECOLOGICAL INFORMATION	

Ecotoxicity Avoid contaminating waterways, drains and sewers. The product forms a moderately acidic aqueous solution and this property may cause environmental effects. It has a high biological oxygen demand and it may cause significant oxygen depletion in aquatic systems. If neutralized, it has low potential to affect aquatic organisms, secondary waste treatment microorganisms and the germination and growth of some plants. When diluted with a large amount of water, this chemical released directly or indirectly into the environment is not expected to have a significant impact.

Ecotoxicity data for citric acid (1) LC50 Shore Crab (*Carcinus maenas*) 160 mg/L/48hr
 LC50 Carp (*Leuciscus idus melanotus*) 440 – 760 mg/L/48hr
Acute toxicity ORAL: LD50: 5400 – 5790 mg/kg bw (mouse) / LD50: 11700 mg/kg bw (rat)
Chronic toxicity NOAEL (10 d) 4000 mg/kg bw/day rats (unidentified gender)
Genetic toxicity Negative
Carcinogenicity NTP, OSHA, IARC: not listed
Reprotoxicity Negative
Specific effects Not Applicable

Mobility No information available

13. DISPOSAL CONSIDERATION

Spill or leak procedures Clean by vacuum or broom sweeping, remove to disposal container.

Waste disposal method Cover with soda ash or sodium bicarbonate to neutralize. Mix and add water if necessary. Scoop up slurry and dispose in accordance with existing National state and local environmental control regulations.

Environmental precautions Contain the spill and prevent contamination into confined areas, drains and waterways. Avoid generating dust. Carefully scoop up, or shovel up uncontaminated product for re-use. Sweep up contaminated material and seal in properly labeled drums for disposal in an area approved by local authority by-laws. No naked flames. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray

Do not incinerate The by-products carbon dioxide and monoxide could be hazardous.

14. TRANSPORT INFORMATION

Technical shipping name Organic dicarboxylic acid.
Freight class bulk Chemicals, NOI.
Freight class package Chemicals, NOI, (NMFC 60000).
Product label Citric Acid, Anhydrous, FCC, USP.
Hazard class or division Non-Regulated DOT (HM-181) (DOMESTIC SURFACE).
Hazard class division number Non-Regulated IMO / IMDG CODE (OCEAN).
Hazard class division number Non-Regulated ICAO / IATA (AIR).
Air transport Not classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) for transport by air.
Road and rail transport Not classified as Dangerous Goods by UN.
Marine transport Not classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.
Un number None.
Un proper shipping name None.
Class and subsidiary risk(s) None.
Packaging group None.
Hazchem code None.
Initial emergency response guide None.
Segregation dangerous goods None.

15. REGULATORY INFORMATION

OSHA status This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.
TSCA status On TSCA Inventory.
CERCLA reportable quantity None.

FDA status Citric Acid meets the specifications given in the current editions of the FCC and USP; also is in chemical compliance with 21 CFR 184.1033 as a Multiple Purpose Generally Recognized As Safe Food Substance.

CALIFORNIA Proposition 65 Not applicable.

16. OTHER INFORMATION

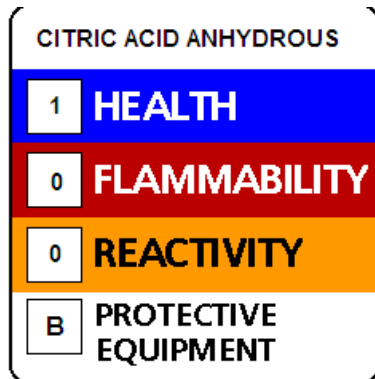
HMIS rating

Health (blue) 1 (Irritation or minor reversible injury possible)

Flammability (red) 0 (Materials that will not burn)

Physical hazard (orange) 0 (Materials that are normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosives.)

Personal protective (white) E (Safety glasses, gloves and dust respirator)



NFPA rating

Health hazard (blue) 2 (Material that on intense or continued but not chronic exposure could cause temporary incapacitation or possible residual injury)

Flammability (red) 1 (Material must be pre-heated before ignition can occur)

Reactivity (yellow) 0 (Material that in itself is normally stable, even under fire exposure conditions, and is not reactive with water)

Special precautions protective gear required (white) Acid (Material is an organic acid and it could be corrosive to metals)

Notice

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Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Aqua Chemical Supply, Inc. sales office.

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