

CITRIC ACID, ANHYDROUS

CAS – N°: 77-92-9

FORMULA: C₆H₈O₇

M. W. : 192,13

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME	Citric Acid, Anhydrous, FCC, USP	
SYNONYMS	2-Hydroxy-1, 2, 3-propanetricarboxylic acid or 2-hydroxypropane-1, 2, 3-tricarboxylic acid	
INTERNAL PRODUCT CODE	PTC1550XX	
RELEVANT IDENTIFIED USES OF THE SUBSTANCE AND USES ADVISED AGAINST	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 organic chemicals, cosmetic products, cleaning products, nontoxic plastics, plasticizer for not toxic plastics, petrochemical industry, building industry, chelated fertilizers, citric acid derivatives and pharmaceutical ingredients.	
PLANT ADDRESS	CONTACT	EMERGENCY
Recta Cali-Palmira km 18. Palmira-Colombia, América del Sur. PBX 572 4310500, Fax: 572 444 5606	Sales business 572 4310 692 / 572 4310 643 Customer service 572 4310 627	EMERGENCY CONTACT 24/7 SUCROAL 57 311 635 1383

2. HAZARDS IDENTIFICATION

CAS N°.	77-92-9	
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	P264: Wash the body parts to be washed after handling. P280: Wear protective gloves / protective clothing / protective equipment for eye / face	
PRECAUTIONARY STATEMENTS - RESPONSE	P305 + P351 + P338: In case of contact with eyes, rinse with water for several minutes. Remove contact lenses when present and can be done carefully. Continue rinsing. P337 + P313: If eye irritation persists, consult a physician.	
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.	
LABELLING ACCORDING TO REGULATION N° 1272/2008	Pictogram: GHS07	
LABELLING ACCORDING TO DIRECTIVE N° 67/548/EEC OR N° 1999/45/EC	Pictogram: Xi Irritant	
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 physician as soon as possible.	
PHRASE – S28	In case in contact with skin rinse with plenty of water.	
PHRASE S – 36/37/38	Wear a suitable protective: clothing / gloves / goggles / disposable mask.	
OTHER HAZARDS:	None known	

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SAFETY DATA SHEET

3. COMPOSITION / INFORMATION ON INGREDIENTS

CHEMICAL FAMILY:	Organic acid
IUPAC NAME	2-Hydroxy-1, 2, 3-propanetricarboxylic acid or 2-hydroxypropane-1, 2, 3-tricarboxylic acid
COMERCIAL NAME:	Citric acid Anhydrous, citric acid
CAS N°	77-92-9
EINECS N°	201-069-1
EC N°	
E-NUMBER	E 330
MOLAR WEIGHT	192.13 g/mol
IMPURITIES	None known
COMPOSITION	Citric Acid: NLT 99,5% and NMT 100,5% of C ₆ H ₈ O ₇ on the anhydrous basis; Water: NMT 0,5% w/w
HAZARDOUS COMPONENTS (ACCORDING TO REGULATION (EC) N° 1272/2008)	Citric Acid: NLT 99,5% and NMT 100,5% of C ₆ H ₈ O ₇ on the anhydrous basis; CAS N°: 77-92-9 Classification: Eye and Skin irritant, Category 2, H319.
HAZARDOUS COMPONENTS (ACCORDING TO REGULATION N° 1999/45/EC)	Citric Acid: NLT 99,5% and NMT 100,5% of C ₆ H ₈ O ₇ on the anhydrous basis; CAS N°: 77-92-9 Classification: Xi, irritant; R36

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.

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SAFETY DATA SHEET

5. FIRE - FIGHTING MEASURES

EXTINGUISHING MEDIA.	Water spray, carbon dioxide, dry chemical powder.
ESPECIFIC 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.
HAZCHEM CODE	None known.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTION AND CAUTION	Use proper personal protective equipment as indicated in Section 8. 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.
ENVIROMENTAL 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 CONDITION FOR SAFE STORAGE.

HANDLING PRECAUTIONS	Wear a 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, 25 kg, 50 lb. - Polyethylene/propylene big bags. 500 kg, 1000kg, 1000 lb, 1500lb, 2000 lb
SPECIAL SENSITIVITY	Keep away to direct or indirect sunlight, heat and adverse weather conditions.
INCOMPATIBLE PRODUCTS:	Strong oxidizing agents, strong bases.

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SAFETY DATA SHEET

8. EXPOSURE CONTROLS / PERSONAL PROTECTION.

CONTROL PARAMETERS:	None known. Recommended concentration of dust in the workplace less than 10 mg/m ³ . 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. 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 must washing their hands and face before and after eating or drinking. 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	Odourless or maple lactone odour
ODOR THRESHOLD	8 ppm (furfural alcohol as odour reference)
pH	2,2 (1% solution)
BOILING POINT	Not Applicable (> 153 °C decomposition)
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
SPECIFIC GRAVITY / DENSITY	Density: 1.542 g/cm ³
BULK DENSITY -TYPICAL-	897 kg/m ³ (granular), 865 kg/m ³ (fine)
% VOLATILE BY VOLUME	Not Applicable
AUTOIGNITION	1010 °C
VAPOR PRESSURE	Not Applicable

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M. W. : 192,13

SAFETY DATA SHEET

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.
DECOMPOSITION PRODUCTS	In case of fire CO, CO ₂ and other potentially toxic fumes.

11. TOXICOLOGICAL INFORMATION

TOXICITY

ACUTE EFFECTS BY.

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.
EYE CONTACT	Highly irritating to the eyes, will cause tearing, stinging, blurred vision and redness.
SKIN CONTACT	Causes irritation to skin. Symptoms include redness, itching, and pain
INHALATION	Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath
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	No toxicity data for this specific product, however toxicity data for the hazardous ingredient is listed below.

12. ECOLOGICAL INFORMATION

ECOTOXICITY	Citric acid is a chemical substance with very favourable ecological profile. HERA 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: NA
MOBILITY	Highly movable in the water and soil. Rapidly degraded in both surface water and soil. HERA.

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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 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

TECHINICAL SHIPPING NAME	Organic 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

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SAFETY DATA SHEET

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

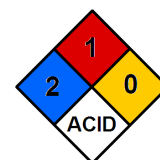
OTHER CLASSIFICATIONS OF THE SUBSTANCE

HMIS rating

CITRIC ACID ANHYDROUS	
1	HEALTH
0	FLAMMABILITY
0	REACTIVITY
E	PROTECTIVE EQUIPMENT

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)
SAFETY DATA SHEET ISSUE	01
SAFETY DATA SHEET VALID DATE	2014 05 01
REVIEWED BY QUALITY CITRIC ACID, CITRATES AND SOLUTION DEPARTMENT. 2014.	

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LEGAL NOTICE: Sucroal S.A. has prepared the information contained in this Safety Data Sheet guidance and the best of our knowledge and scientific papers about to health and safety data of the product and in particular how to safe handling, use, processing, storage, transportation, disposal and release the product by a properly trained persons. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for particular purpose and their use. This sheet is not a quality specification. This document is intended only as guidance to the appropriate precautionary handling of the material by expert's workers, transporters and manpower related with this product.

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END OF SAFETY DATA SHEET