

EMS CATALOG NO: 12480
EMS PRODUCT: Citric Acid
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MATERIAL SAFETY DATA SHEET

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FOR PRODUCT AND SALES INFORMATION

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PRODUCT IDENTIFICATION

COMMON NAME: Citric Acid

COMMERCIAL NAME(S): Not available.

SYNONYM: 2-Hydroxy-1,2,3-propanetricarboxylic acid

CHEMICAL NAME: Not available.

CHEMICAL FAMILY: Not available.

CHEMICAL FORMULA: C₆H₈O₇

CAS#: 77-92-9

RTECS: GE7350000

TSCA: On the TSCA list.

CI#: Not available.

COMPOSITION AND INFORMATION ON INGREDIENTS

NAME: Citric Acid

CAS#: 77-92-9

% BY WEIGHT: 100

TOXICOLOGICAL DATA ON INGREDIENTS: Citric Acid

ORAL (LD50): Acute: 5040 mg/kg (Mouse). 6730 mg/kg (Rat).

HAZARDS IDENTIFICATION

POTENTIAL ACUTE HEALTH EFFECTS:

Slightly dangerous to dangerous in case of ingestion, of inhalation. Very slightly to slightly dangerous in case of skin contact (irritant, permeator), of eye contact (irritant). Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. This product may irritate eyes and skin upon contact.

POTENTIAL CHRONIC HEALTH EFFECTS:

CARCINOGENIC EFFECTS: Not available.

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

The substance is toxic to mucous membranes. Toxicity of the product to the reproductive system: Not available. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

FIRST AID MEASURES

EYE CONTACT:

Check for and remove any contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes, keeping eyelids open. COLD water may be used. DO NOT use an eye ointment. Seek medical attention.

SKIN CONTACT:

If the chemical got onto the clothed portion of the body, remove the contaminated clothes as quickly as possible, protecting your own hands and body. Place the victim under

a deluge shower. If the chemical touches the victim's exposed skin such as the hands: Neutralize exposed skin with a dilute solution of sodium carbonate. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. COLD water may be used. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

SERIOUS SKIN CONTACT:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

INHALATION:

Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

SERIOUS INHALATION:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. **WARNING:** It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

INGESTION:

DO NOT induce vomiting. Have conscious person drink several glasses of water or milk. Seek immediate medical attention.

SERIOUS INGESTION:

DO NOT induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt, or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

FIRE AND EXPLOSION DATA

FLAMMABILITY OF THE PRODUCT: Combustible.

AUTO-IGNITION TEMPERATURE: Not available.

FLASH POINTS: Not available.

FLAMMABLE LIMITS: Lower: 3.6%

Upper: 29%

PRODUCTS OF COMBUSTION: These products are carbon oxides (CO, CO₂).

FIRE HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES: No specific

information is available in our database regarding the flammability of this product in presence of various materials.

EXPLOSION HAZARDS IN PRESENCE OF VARIOUS SUBSTANCES:

RISKS OF EXPLOSION OF THE PRODUCT IN PRESENCE OF MECHANICAL IMPACT: Not available.

RISKS OF EXPLOSION OF THE PRODUCT IN PRESENCE OF STATIC DISCHARGE: Not available.

FIRE FIGHTING MEDIA AND INSTRUCTIONS:

SMALL FIRE: Use DRY chemicals, CO₂, water spray or foam.

LARGE FIRE: Use water spray, fog or foam. DO NOT use water jet.

SPECIAL REMARKS ON FIRE HAZARDS: No additional remark.

SPECIAL REMARKS ON EXPLOSION HAZARDS: No additional remark.

ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Use appropriate tools to put the spilled solid in a convenient waste disposal container. If necessary: Neutralize the residue with a dilute solution of sodium carbonate.

LARGE SPILL:

Corrosive solid.
Stop leak if without risk. DO NOT get water inside container. DO NOT touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all sources of ignition. Call for assistance on disposal. Neutralize the residue with a dilute solution of sodium carbonate.

HANDLING AND STORAGE

PRECAUTIONS:

Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. DO NOT breathe dust. Never add water to this product. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If you feel unwell, seek medical attention and show the label when possible.

STORAGE:

Keep container dry. Keep in a cool place. Ground all equipment containing material. Corrosive materials should be stored in a separate safety storage cabinet or room.

EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

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.

PERSONAL PROTECTION:

Splash goggles, Synthetic apron. Vapor and dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Gloves. Wear appropriate respirator when ventilation is inadequate.

PERSONAL PROTECTION IN CASE OF A LARGE SPILL:

Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

EXPOSURE LIMITS: Not available.

PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE AND APPEARANCE: Solid
ODOR: Not available.
TASTE: Not available.
COLOR: Not available.
MOLECULAR WEIGHT: 192.13
pH (1% SOLN/WATER): 1
BOILING POINT: Decomposes.
MELTING POINT: 153oC (307.4oF)
CRITICAL TEMPERATURE: Not available.
SPECIFIC GRAVITY: 1.665 (Water = 1)
VAPOR PRESSURE: 0mm of Hg @20oC)
VAPOR DENSITY: Not available.
VOLATILITY: Not available.
ODOR THRESHOLD: Not available.
WATER/OIL DIST. COEFF.: 52.5
IONICITY (IN WATER): Not available.
DISPERSION PROPERTIES: See solubility in water.
SOLUBILITY: Easily soluble in cold water.

STABILITY AND REACTIVITY DATA

STABILITY: The product is stable.
INSTABILITY TEMPERATURE: Not available.
CONDITIONS OF INSTABILITY: No additional remark.
INCOMPATIBILITY WITH VARIOUS SUBSTANCES: No specific information is available in our database regarding the reactivity of the material in presence of various other materials.
CORROSIVITY: Non-corrosive in presence of glass.
SPECIAL REMARKS ON REACTIVITY: No additional remark.
SPECIAL REMARKS ON CORROSIVITY: No additional remark.
POLYMERIZATION: No.

TOXICOLOGICAL INFORMATION

ROUTES OF ENTRY: Ingestion. Inhalation.
TOXICITY TO ANIMALS: Acute oral toxicity (LD50): 5040 mg/kg (Mouse).
CHRONIC EFFECTS ON HUMANS: The substance is toxic to mucous membranes. Toxicity of the product to the reproductive system: Not available.
OTHER TOXIC EFFECTS ON HUMANS: Slightly dangerous to dangerous in case of ingestion, of inhalation. Very slightly to slightly dangerous in case of skin contact (irritant, permeator), of eye contact (irritant).
SPECIAL REMARKS ON TOXICITY TO ANIMALS: No additional remark.
SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS: No additional remark.
SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS: No additional remark.

ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.
BOD5 AND COD: Not available.
PRODUCTS OF BIODEGRADATION: These products are carbon oxides (CO, CO2)
TOXICITY OF THE PRODUCTS OF BIODEGRADATION: The products of degradation are more toxic.
SPECIAL REMARKS ON THE PRODUCTS OF BIODEGRADATION: No additional remark.

DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Recycle to process, if possible. Consult your local or regional authorities.

TRANSPORT INFORMATION

DOT CLASSIFICATION: DOT CLASS 8: Corrosive solid.

IDENTIFICATION:

SPECIAL PROVISIONS FOR TRANSPORT: No additional remark.

OTHER REGULATORY INFORMATION

FEDERAL AND STATE REGULATIONS: The following product(s) is (are) listed on TSCA: Citric Acid.

OTHER REGULATIONS:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

OTHER CLASSIFICATIONS:

WHMIS (CANADA): WHMIS CLASS E: Corrosive solid.

DSCLA (EEC):

R35-Causes severe burns.

R37-Irritating to respiratory system.

HMIS (U.S.A.):

HEALTH HAZARD: 3

FIRE HAZARD: 1

REACTIVITY: 0

PERSONAL PROTECTION: j

NATIONAL FIRE PROTECTION ASSOCIATION (U.S.A.)

HEALTH: 0

FLAMMABILITY: 1

REACTIVITY: 0

SPECIFIC HAZARD: COR

PROTECTIVE EQUIPMENT:

Gloves.

Synthetic apron.

Vapor and dust respirator. Be sure to use a MSHA/NIOSH approved respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Splash goggles.