

Citri-Pure®

Date of Preparation: October 2003

Revision: New

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Citri-Pure®**Chemical Formula:** C₆H₈O₇**Other Designations:** Citric Acid Solution; Citric Acid**General Use:** As a sequestering agent to remove trace metals; in electroplating process; laboratory reagent.

Manufacturer: Kanto Corporation, 13424 N. Woodrush Way, Portland, OR 97203
(Manufactured under license to VWR Scientific,
1310 Goshen Parkway, West Chester, PA 19380.
Citri-Pure® is a registered trademark owned by VWR Scientific)

Non-Emergency Contact: Kanto Customer Service, Phone (503) 283-0405, FAX (503) 240-0409

For All Transportation Emergencies Call CHEMTREC at 1-800-424-9300

Section 2 - Composition/ Information on Ingredients

| Ingredient Name | CAS Number | % w/w |
|------------------|------------|-------|
| Citric Acid | 77-92-9 | 10% |
| De-ionized Water | 7732-18-5 | 90% |

Occupational Exposure Limits

| Ingredient | OSHA PEL | ACGIH TLV | NIOSH REL | NIOSH |
|-------------|------------------|------------------|------------------|------------------|
| Citric Acid | None established | None established | None established | None established |

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

Caution! Causes eye irritation. May be harmful if swallowed. May cause skin irritation.
Odorless, colorless liquid.

HMIS

H 1

F 0

R 0

PPE†

†Sec. 8

Potential Health Effects

Primary Entry Routes: Eye contact, inhalation, and ingestion.**Target Organs:** Eye, skin, gastrointestinal and respiratory system.**Acute Effects****Inhalation:** Vapors may be irritating and discomforting to the upper respiratory tract.**Eye:** Moderately discomforting to the eyes and is capable of causing temporary redness or vision impairment upon contact.
Repeated or prolonged exposure may cause conjunctivitis.**Skin:** Mildly discomforting and may cause drying leading to dermatitis.**Ingestion:** May be harmful in large doses resulting in gastrointestinal tract irritation. Small doses are not expected to be harmful.**Carcinogenicity:** Not listed as a carcinogenic material.**Medical Conditions Aggravated by Long-Term Exposure:** Emphysema, chronic bronchitis, dermatitis.**Chronic Effects:** Excessive and long term exposure may result in irritation of the eyes, skin, and mucous membranes of the respiratory tract. May be an allergen for some people. May cause tooth enamel erosion and hypocalcemia.

Section 4 - First Aid Measures

Eye Contact: Gently lift eyelids and flush immediately and continuously with copious amounts of water for at least 15 minutes.
Do not allow the victim to rub or keep eyes tightly shut. Consult an ophthalmologist immediately.**Skin Contact:** Rinse with flooding amounts of water, while removing contaminated clothing, for at least 15 minutes. Wash with soap and water. Seek medical attention immediately. Wash clothing before reuse.**Ingestion:** If the victim is conscious, give large amounts of water. Seek medical attention immediately. Never give anything by mouth to an unconscious or convulsing person.**Inhalation:** Remove exposed person to an uncontaminated atmosphere and support breathing. If not breathing, give artificial respiration. Seek medical attention immediately.

After first aid, seek appropriate in-plant, paramedic, or community medical support.

Section 5 - Fire-Fighting Measures

Flash Point: Nonflammable

Auto ignition Temperature: Not applicable

LEL: Not applicable

UEL: Not applicable

Flammability Classification: Nonflammable

Extinguishing Media: Water, dry chemical, or CO₂.

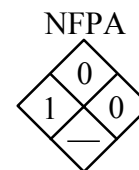
Unusual Fire or Explosion Hazards: None.

Hazardous Combustion Products: Decomposition of product may produce toxic or corrosive fumes and acrid smoke.

Fire Incompatibility: Avoid contamination with strong oxidizers as ignition may result.

Fire-Fighting Instructions: Contact fire department and tell them location and nature of hazard. Prevent spillage from entering drains or waterways. Do not approach containers suspected to be hot. Cool fire-exposed containers with water spray from a protected location. If safe to do so, remove containers from path of fire. Avoid spraying water onto liquid pools.

Fire-Fighting Equipment: Because fire produces toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full-face piece operated in pressure-demand or positive-pressure mode. Equipment should be thoroughly decontaminated after use.



Section 6 - Accidental Release Measures

Small Spills: Wear proper protective equipment. Do not breathe mists or vapors. Flood the area with water and then mop up remaining residue. If needed, neutralize with soda ash or lime.

Large Spills: Contact fire department and tell them the location and nature of the hazard. Evacuate nonessential personnel, isolate area, provide maximum ventilation, and remove all heat and ignition sources. Wear respiratory protection and proper personal protective equipment. Prevent spillage from entering drains or waterways. Contain spill with inert material and neutralize with soda ash or lime. Collect recoverable product for recycling. Absorb remaining spill with sand, earth, or other inert noncombustible material. Place clean-up material in appropriate disposal containers and contact licensed disposal contractor.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120) in addition to any state or federal guidelines.

Section 7 - Handling and Storage

Handling Precautions: Work in a well-ventilated area while wearing proper protective equipment. Avoid contact with incompatible materials. Do not eat, drink, or smoke while handling chemical. Launder work clothes separately. Use good occupational work practices.

Recommended Storage Methods: Do not store near incompatible material. Follow all manufacturer's recommended guidelines.

Regulatory Requirements: Follow applicable federal, state and local regulations and guidelines.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below hazardous level. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or non-routine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA.

Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.

Protective Clothing/Equipment: Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.

Safety Stations: Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

Contaminated Equipment: Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

Comments: Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance and Odor: Clear and colorless.
Odor Threshold: Not available
Vapor Pressure: Not available
Vapor Density (Air=1): Not available
Formula Weight: 210.14
Specific Gravity (H₂O=1, at 4 °C): >1
pH: ~1.5 – 1.6

Water Solubility: >= 100 mg/mL at 22°C
Boiling Point: 127°C
Freezing: Not available
Viscosity: Not available
% Volatile: Not available
Evaporation Rate: Not available
Density: Not available

Section 10 - Stability and Reactivity

Stability: Stable under normal handling conditions.
Polymerization: Hazardous polymerization will not occur.
Chemical Incompatibilities: Strong bases, oxidizers, alkalis or alkali carbonates, and reducing agents.
Conditions to Avoid: Keep away from incompatibles and heat sources including open flames.
Hazardous Decomposition Products: Thermal oxidative decomposition of mixture can produce carbon monoxide or carbon dioxide gases.

Section 11- Toxicological Information*

Rabbit, eye, 5mg/30sec rinse: Mild irritation
 Rat, intraperitoneal, LD₅₀: 375 mg/kg

Chronic Effects: Irritation of the eyes, skin, and mucous membranes of the respiratory tract. May cause tooth enamel erosion and hypocalcemia.
Carcinogenicity: None listed

* See NIOSH, RTECS (GE77810000), for additional toxicity data.

Section 12 - Ecological Information

Ecotoxicity: Not expected to be toxic to the environment. May cause a shift in the pH of the water.
Environmental Fate: Citric acid is expected to break down in the environment; the components of which are less toxic than the product itself.

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations.
Disposal Regulatory Requirements: Follow applicable Federal, state, and local regulations.
Container Cleaning and Disposal: Triple rinse before disposing of container. Empty container may contain hazardous residue and vapors. Follow all label warnings even after the container is empty.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Not Regulated by DOT
Hazard Class: Non-hazardous
ID No.: N/A

Section 15 - Regulatory Information

EPA Regulations:

EPA Hazardous Waste Number and Classification (40 CFR 261.22): Characteristics of Corrosivity
 CERCLA Hazardous Substance (40 CFR 302.4) unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112
 RCRA Hazardous Waste Number (40 CFR 302.4): Not listed
 RCRA Hazardous Waste Classification (40 CFR 302.4): Not listed
 CERCLA Reportable Quantity (RQ): Not listed
 SARA 311/312 Codes: Immediate (Acute) Health Hazard
 SARA Toxic Chemical (40 CFR 372.65): Not listed
 SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed
 TSCA: Listed (as Anhydrous Citric Acid)

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

Section 16 - Other Information

Revision Notes: New MSDS

Disclaimer: This Material Safety Data Sheet is offered solely for the customer's information, consideration and investigation. Kanto Corporation provides no express or implied warranties with respect to the information contained herein. Although all data included in this MSDS is believed to be accurate, Kanto Corporation makes no representations as to its accuracy, sufficiency or completeness. Conditions of use are beyond Kanto Corporation's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product, or from the use of, or reliance upon, information contained herein