



Effective Date: 10/10/15

Replaces Revision: 01/01/13, 07/21/11

NON-EMERGENCY TELEPHONE  
610-866-4225

24-HOUR CHEMTREC EMERGENCY TELEPHONE  
800-424-9300

## SDS – SAFETY DATA SHEET

### 1. Identification

**Product Identifier:** CITRIC ACID 1 – 50% SOLUTION

**Synonyms:** 2 - Hydroxy - 1,2,3 - Propanetricarboxylic Acid

**Chemical Formula:** H<sub>3</sub>C<sub>6</sub>H<sub>5</sub>O<sub>7</sub>

**Recommended Use of the Chemical and Restrictions On Use:** Laboratory Reagent

**Manufacturer / Supplier:** Puritan Products; 2290 Avenue A, Bethlehem, PA 18017 **Phone:** 610-866-4225

**Emergency Phone Number:** 24-Hour Chemtrec Emergency Telephone 800-424-9300

### 2. Hazard(s) Identification

**Classification of the Substance or Mixture:**

Acute toxicity, Dermal (Category 5)

Skin irritation (Category 3)

Eye irritation (Category 2A)

**Risk Phrases:**

Symbol: Xi

R36/R38: Irritating to eyes and skin.

**Label Elements:**

**Trade Name:** CITRIC ACID 1 – 50% SOLUTION

**Signal Word:** Warning



**Hazard Statements:**

H313: May be harmful in contact with skin.

H316: Causes mild skin irritation.

H320: Causes eye irritation.

**Precautionary Statements:**

P301+330: IF SWALLOWED: Rinse mouth.

P302+350: IF ON SKIN: Gently wash with soap and water.

P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER or doctor / physician.

### 3. Composition / Information on Ingredients

**CAS Number:** 77-92-9

**EC Number:** 201-069-1

**Molecular Weight:** 192.12 g/mol

Ingredient	CAS Number	EC Number	Percent	Hazardous	Chemical Characterization
Citric Acid	77-92-9	201-069-1	1 - 50%	Yes	Substance
Water	7732-18-5	231-791-2	50 - 99%	No	Mixture

### 4. First-aid Measures

**Inhalation:** If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen. Get medical attention.

**Ingestion:** Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

**Skin Contact:** Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:** Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Consult a physician.

### 5. Fire-fighting Measures

**Fire:** Autoignition temperature: 1011C (1852F.) Not considered to be a fire hazard.

**Explosion:** Not considered to be an explosion hazard.

**Fire Extinguishing Media:** Use any means suitable for extinguishing surrounding fire.

**Special Information:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in the pressure demand or other positive pressure mode.

### 6. Accidental Release Measures

**Personal Precautions, Protective Equipment and Emergency Procedures:** Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering.

**Environmental Precautions and Methods and Materials for Containment and Cleaning Up:** Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

### 7. Handling and Storage

**Precautions for Safe Handling and Conditions for Safe Storage, Including Any Incompatibilities:** Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid.) Observe all warnings and precautions listed for the product.

### 8. Exposure Controls / Personal Protection

**Airborne Exposure Limits:**

OSHA Permissible Exposure Limit (PEL): None listed

ACGIH Threshold Limit Value (TLV): None listed

**Ventilation System:** A system of local and / or general exhaust is recommended to keep employee exposures low. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

**Personal Respirators (NIOSH Approved):** For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerin, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in Oxygen-deficient atmospheres.

**Skin Protection:** Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

**Eye Protection:** Use chemical safety goggles and / or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

## 9. Physical and Chemical Properties

**Appearance:** Clear colorless liquid

**Odor:** Odorless

**Odor Threshold:** No information found

**pH:** 2.2 (0.1 N sol)

**% Volatiles by volume @ 21C (70F):** 0

**Melting Point:** Melting point/range: 153 - 159C (307 - 318F) - lit. (Citric Acid)

**Boiling Point / Boiling Range:** No information found

**Flash Point:** No information found

**Evaporation Rate (BuAc=1):** No information found

**Flammability:** No information found

**Upper / Lower Flammability or Explosive Limits:** No information found

**Vapor Pressure (mm Hg):** No information found

**Vapor Density (Air=1):** No information found

**Relative Density:** No information found

**Solubility:** 383 g/l at 25C (77F) (Citric Acid)

**Partition Coefficient: n-octanol / water:** log Pow: -1.64 at 20C (68F) (Citric Acid)

**Auto-ignition Temperature:** 1011C (1852F) (Citric Acid)

**Decomposition Temperature:** No data available

**Viscosity:** 20 cps (Citric Acid)

## 10. Stability and Reactivity

**Reactivity and / or Chemical Stability:** Stable under recommended storage conditions.

**Possibility of Hazardous Reactions and Conditions to Avoid:** Heat and incompatibles.

**Incompatible Materials:** Metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, Potassium Tartrate. Will corrode Copper, Zinc, Aluminum and their alloys.

**Hazardous Decomposition Products:** Carbon Dioxide and Carbon Monoxide may form when heated to decomposition.

## 11. Toxicological Information

**Emergency Overview:** WARNING! CAUSES SEVERE EYE IRRITATION. CAUSES IRRITATION TO SKIN AND RESPIRATORY TRACT.

## Potential Health Effects:

**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; may also be abrasive.

**Chronic Exposure:** Chronic or heavy acute ingestion may cause tooth enamel erosion.

**Aggravation of Pre-existing Conditions:** No information found.

**Specific Target Organ Toxicity - Single Exposure (Globally Harmonized System:)** No data available.

**Specific Target Organ Toxicity - Repeated Exposure (Globally Harmonized System:)** No data available.

**Numerical Measures of Toxicity:** Cancer Lists: NTP Carcinogen

Ingredient	Known	Anticipated	IARC Category
Citric Acid (77-92-9)	No	No	None
Water (7732-18-5)	No	No	None

### Acute Toxicity:

Oral rat LD50: 3 gm/kg; irritation skin rabbit: 500 mg/24H mild; eye rabbit: 750 ug/24H severe.

## 12. Ecological Information

### Ecotoxicity:

Toxicity to fish mortality LC50 - *Leuciscus idus melanotus* - 440 mg/l - 48 h / Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates static test - *Daphnia magna* (Water flea) - 1,535 mg/l - 24 h

**Persistence and Degradability:** This material is expected to biodegrade.

**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

**Other adverse effects:** No data available.

## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

## 14. Transport Information

### Land Transport ADR/RID and GGVs/GGVE (Cross Border / Domestic)

Not regulated

### Maritime Transport IMDG/GGVSea

Not regulated

### Air Transport ICAO-TI and IATA-DGR

Not regulated

## 15. Regulatory Information

### Chemical Inventory Status – Part 1

Ingredient	TSCA	EC	Japan	Australia
Citric Acid (77-92-9)	Yes	Yes	Yes	Yes
Water (7732-18-5)	Yes	Yes	Yes	Yes

### Chemical Inventory Status – Part 2

Ingredient	Korea	Canada		Phil.
		DSL	NDSL	
Citric Acid (77-92-9)	Yes	Yes	No	Yes
Water (7732-18-5)	Yes	Yes	No	Yes

### Federal, State & International Regulations - Part 1

Ingredient	SARA 302		SARA 313	
	RQ	TPQ	List Chemical	Catg.
Citric Acid (77-92-9)	No	No	No	No
Water (7732-18-5)	No	No	No	No

### Federal, State & International Regulations - Part 2

Ingredient	RCRA		TSCA
	CERCLA	261.33	8(d)
Citric Acid (77-92-9)	No	No	No
Water (7732-18-5)	No	No	No

<b>Chemical Weapons Convention:</b> No		<b>TSCA 12(b):</b> No		<b>CDTA:</b> No
<b>SARA 311/312:</b>	<b>Acute:</b> Yes	<b>Chronic:</b> No	<b>Fire:</b> No	<b>Pressure:</b> No
<b>Reactivity:</b> No		Mixture / Liquid		

**Australian Hazchem Code:** Not classified

**Poison Schedule:** None allocated

## 16. Other Information

*Effective Date:* 10/10/15

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