

# Safety Data Sheet

According to Regulation (EU) No. 1907/2006 (Reach), Annex II

**Product name:** Citric Acid



## Section 1: Identification of the substance/mixture and of the company/undertaking

### 1.1 Product Identifier:

**Substances:** Citric Acid

**Substance Names:** 2-hydroxypropane-1,2,3-tricarboxylic Acid

**CAS No:** 77-92-9

**Trade name/designation:** Citric Acid

### 1.2 Relevant identified uses of the substance or mixture and uses advised against

**Relevant identified uses:** Etching

**Uses advised against:** None

### 1.3 Details of the supplier of the safety data sheet

**Supplier:**

Trace Zero  
Manufacturing  
2740 Auburn Court  
Auburn Hills, MI 48326

### 1.4 Emergency Phone Number:

For Hazardous Materials [or Dangerous Goods] Incident  
Spill, Leak, Fire, Exposure, or Accident  
Call CHEMTREC Day or Night  
Within USA and Canada: 1-800-424-9300  
Outside USA and Canada: +1 703-741-5970

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## Section 2: Hazards Identification

### 2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]	SCL and/or M-factor	Classification procedure
Not listed	Not applicable	Not applicable

Classification according to 67/548/EEC or 1999/45/EC	SCL and/or M-factor	Classification procedure
Not listed	Not applicable	Not applicable

#### 2.1.1 Additional information

No data available

### 2.2 Label elements

#### 2.2.1 Labeling according to Regulation (EC) No 1272/2008 [CLP/GHS]

Not listed

**Product identifier:** Citric Acid

#### Hazard pictograms



**Signal Word:** Danger

#### Hazard Statements

**H314** Causes severe skin burns and eye damage

**H302** Harmful if swallowed

**H319** Causes serious eye irritation

**H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled

**H290** May be corrosive to metals

**H413** May cause long lasting harmful effects to aquatic life

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## *Precautionary Statements*

**P270** Do not eat, drink or smoke when using this product.

**P280** Wear protective gloves/protective clothing/eye protection/face protection.

**P363** Wash contaminated clothing before reuse.

**P301 + P330 + P331** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**P302 + P352** IF ON SKIN: Wash with plenty of soap and water.

**P261** Avoid breathing dust/fume/gas/mist/vapours/spray.

**P305 + P351 + P338** IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

**P234** Keep only in original container.

**P390** Absorb spillage to prevent material damage.

**P273** Avoid release to the environment.

## *Supplemental Hazard information (EU)*

No data available.

## *Special rules for supplemental label elements for certain mixtures*

No data available.

## *Additional labeling*

No data available.

## **2.3 Other Hazards**

**Inhalation:** High concentrations: causes respiratory tract irritation.

**Skin Contact:** May cause moderate irritation of the skin and/or an allergic reaction.

**Eye Contact:** Causes eye burns. Prolonged contact causes serious eye and tissue damage.

**Ingestion:** May be harmful if swallowed. Symptoms include nausea, diarrhea, vomiting, and abdominal pain.

**Chronic Health Effects:** None known.

**Adverse environmental effects:** The product may affect the acidity in water with risk of harmful effects to aquatic organisms.

**Other adverse hazards:** This product is hazardous according to OSHA 29CFR 1910.1200.

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## Section 3: Composition/information on ingredients

### 3.1 Mixtures

**3.1.1 Description of the mixture:** Aqueous solution of Citric Acid and water.

#### 3.1.2 Hazardous ingredients

Substance name	CAS No.	EC No.	Concentration (Weight %)	Classification according to Regulation (EC) No. 1272 [CLP]	SCL and/or M-factor
Citric Acid	77-92-9	201-069-1	30-50%	Not listed	-

Substance name	CAS No.	EC No.	Concentration (Weight %)	Classification according to 67/548/EEC or 1999/45/EC	SCL and/or M-factor
Citric Acid	77-92-9	201-069-1	30-50%	Not listed	-

#### 3.1.3 Additional information

No data available

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## Section 4: First-aid Measures

### 4.1 Description of first aid measures

#### *4.1.1 General information*

Product causes eye and skin burns: rinse product off as soon as possible. If ingested, dilute with water or milk.

**4.1.2 Inhalation:** Move injured person into fresh air and keep calm under observation. Seek medical attention if discomfort continues.

**4.1.3 Skin Contact:** Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. Non-abrasive soap may be used along with cold water to reduce swelling of chemical burn. Be sure to carefully clean folds and crevices and creases in the skin. Cover the irritated skin with an emollient. Seek medical attention immediately.

**4.1.4 Eye Contact:** Flush thoroughly with water for at least 15 minutes at eye wash facility. Make sure to remove any contact lenses from the eyes before rinsing. Seek medical attention immediately.

**4.1.5 Ingestion:** DO NOT induce vomiting. Examine mouth to ascertain whether the tissues are damaged. Loosen all restrictive clothing. Rinse mouth thoroughly with water and give large amounts of milk or water, if person is conscious. Seek medical attention immediately.

#### *4.1.6 Self-protection of the first aider*

If the victim is not breathing, perform mouth-to-mouth resuscitation with bag or other mechanical device to prevent further contamination.

### 4.2 Most important symptoms and effects, both acute and delayed

Skin and eye contact: Hazardous, causes burns.

Ingestion: Hazardous.

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

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## Section 5: Firefighting Measures

### 5.1 Extinguishing media

*Suitable Extinguishing Media:* Use fire-extinguishing media appropriate for surrounding materials. Most types of extinguishers are applicable.

*Non-suitable Extinguishing Media:* Water jet.

### 5.2 Special Hazards arising from the substance or mixture

During a fire, gases hazardous to health may be formed.

Hazardous combustion products: Carbon dioxide, Carbon monoxide, Nitrogen Oxides.

### 5.3 Advice for Firefighters

Cool containers exposed to heat with cool water spray and remove container from hazardous surroundings if no risk is involved.

Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

### 5.4 Additional information

Flammability class: 0

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## Section 6: Accidental Release Measures

### 6.1 Personal Precautions, protective equipment and emergency procedures

#### *6.1.1 For non-emergency personnel*

Avoid inhalation of vapors and contact with skin and eyes by wearing the proper protective clothing.

#### *6.1.2 For emergency responders*

Avoid inhalation of vapors and contact with skin and eyes by wearing the proper protective clothing. Use breathing barriers if necessary.

### 6.2 Environmental precautions

Avoid discharge to drains or watercourses or onto grounds unless authorized by permit. Only flush to drain after area is proven to be neutral pH.

### 6.3 Methods and materials for containment and cleaning up

#### *6.3.1 For containment*

Use proper absorbent material. Dike area and collect water if used to dilute.

#### *6.3.2 For cleaning up*

Avoid discharge to drains or watercourse or grounds unless authorized by permit. For larger spills, use compatible absorbent material and properly dispose material in containers in appropriate waste containers. Solids that absorb hazardous materials take on the properties of the liquid.

#### *6.3.3 Other information*

Not applicable

### 6.4 Reference for other sections

Section 13: waste disposal

### 6.5 Additional information

No data available

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## Section 7: Handling and Storage

### 7.1 Precautions for safe handling

Local exhaust is recommended. Avoid inhalation of vapors and contact with skin and eyes.

#### *7.1.2 Protective measures*

Wear eye/face protection. Wear protective gloves and appropriate clothing to prevent skin contact.

#### *7.1.3 Advice on general occupational hygiene*

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

### 7.2 Conditions for safe storage, including any incompatibilities

#### **Technical measures and storage conditions**

Store in closed original container at temperatures between 10°C and 32°C, 50 °F to 90 °F. Store away from incompatible materials.

#### **Packaging materials**

Store in original containers. For shipping, use product compatible containers. Secondary containment is suggested to prevent leaks from spreading.

#### **Requirements for vessels**

Material should be stored in secondary container diked areas away from direct sunlight.



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## Section 8: Exposure Controls/Personal Protection

### 8.1 Control Parameters

#### *8.1.1 Occupational exposure limits*

No exposure limit noted for ingredients(s) on ACGIH, OSHA, and WEEL lists. Consult Canadian Provincial Regulations and /or Mexican Regulations on exposure limits, if applicable.

Treated as a general corrosive based on industrial hygiene standards.

### 8.2 Exposure Controls

#### *8.2.1 Appropriate engineering controls*

Provide adequate ventilation. Ventilation system should be made of corrosive resistant material and vent directly outside. Eyewash facilities and emergency shower must be available when handling this product.

#### *8.2.2 Personal Protective Equipment (PPE)*

**Eyes and Face:** Wear approved safety goggles.

**Skin:** Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier.

**Respiratory:** If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Use a NIOSH/MSHA approved air-purifying respirator as needed to control exposure. Use positive pressure air supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

**Thermal Hazards:** Thermally protective apron coat with long sleeves is recommended when the volume of hot material is significant.

#### *8.2.3 Environmental Exposure Controls*

Avoid discharge to drains or watercourses or onto grounds unless authorized by permit.

#### *8.2.4 Consumer exposure control*

Wear appropriate PPE when handling product. Use in well-ventilated area.

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## Section 9: Physical and Chemical Properties

### 9.1 Physical and Chemical Properties

#### 9.1.1 Appearance

Physical state: Liquid    Color: Colorless    Odor: Slight sugary odor    Odor threshold: No data available

#### 9.1.2 Safety relevant basic data

pH:	0-2.5
Melting point/freezing point:	Not applicable
Initial boiling point/boiling range:	104 C
Flashpoint	Not applicable
Evaporation Rate:	No data available
Flammability (solid, gas)	Not applicable
Upper explosive limits	Not applicable
Lower explosive limits	Not applicable
Vapor pressure	No data available
Vapor density	No data available
Relative density	<1.24 g/cm <sup>3</sup>
Solubility in Water:	Soluble 162 g/ 100mL water
Partition Coefficient (n-Octanol/water):	No data available
Autoignition Temperature:	Not applicable
Decomposition Temperature:	Not applicable
Viscosity, dynamic:	No data available
Viscosity, cinematic:	No data available
Explosive properties	Not applicable
Oxidizing properties	Not applicable

#### 9.1.3 Physical Hazards

This product is not flammable or combustible.

### 9.2 Other information

No data available

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## Section 10: Stability and Reactivity

### 10.1 Reactivity

Low

### 10.2 Chemical Stability

This product is stable under expected conditions of uses. Aqueous solutions of Citric Acid may ferment if left standing for long period of time.

### 10.3 Possibility of Hazardous Reactions

Potentially explosive reaction with metal nitrates, strong bases, and oxidizers.

### 10.4 Conditions to avoid

Excessive heat

### 10.5 Incompatible materials

Oxidizing agents. Reducing agents. Bases.

### 10.6 Hazardous decomposition products

Carbon Dioxide and Carbon Monoxide, Nitrogen Oxides (at elevated temperatures)

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## Section 11: Toxicological Information

### 11.1 Information on toxicological effects

#### 11.1.1 Substances

##### Acute Toxicity:

Chemical Name	Test Results
Citric Acid	Oral LD50 (Rat): 3 g/kg
	Subcutaneous LD50 (Rat): 5500 mg/kg
	Oral LD50 (Mouse): 5400 mg/kg
	Subcutaneous (Mouse): 2700 mg/kg
	Intravenous (Mouse): 42 mg/kg

**Listed Carcinogens:** None

#### Product Information

**Acute Toxicity:** Causes skin and eye burns. May be harmful if swallowed.

**Chronic Toxicity:** None known

#### 11.2 Other information

No data available

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## Section 12: Ecological Information

### 12.1 Toxicity

#### *12.1.1 Aquatic toxicity*

Citric Acid biodegrades quite rapidly. It is dangerous to aquatic life in high concentrations. Lowers pH in water but does not dissociate to any great extent.

#### *12.1.2 Sediment toxicity*

No data available

#### *12.1.3 Terrestrial toxicity*

No data available

### 12.2 Persistence and degradability

Lowers pH in water but does not dissociate to any great extent.

### 12.3 Bioaccumulation potential

Very low

### 12.4 Mobility in soil

The product is water soluble.

### 12.5 Results of PBT and vPvB assessment

No data available

### 12.6 Other adverse effects

No data available

### 12.7 Additional toxicological information

No data available

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## Section 13: Disposal Considerations

### 13.1 Waste treatment methods

Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. The facility should have the necessary hazardous waste disposal infrastructure in place.

#### 13.1.1 Product/Packaging methods

*Waste codes/waste designations according to EWC/AVV*

RCRA Information: D002

EWC/AVV: Not listed

#### *Packaging*

Use appropriate packaging materials

#### 13.1.2 Waste treatment options

No data available

#### 13.1.3 Other disposal recommendations

No data available

### 13.2 Additional information

No data available

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## Section 14: Transportation

	<b>Land transport (ADR/RID)</b>	<b>Inland waterway transport (ADN)</b>	<b>Sea transport (IMDG)</b>	<b>Air transport (ICAO- TI/IATA- DGR)</b>
<b>14.1 UN No.</b>	UN3265	UN3265	UN3265	UN3265
<b>14.2 UN Proper shipping label</b>	2- hydroxypropane- 1,2,3- tricarboxylic Acid	2- hydroxypropane- 1,2,3- tricarboxylic Acid	Corrosive liquid	Corrosive liquid
<b>14.3 Transport hazard class(es)</b>	8	8	8	8
<b>Hazard label(s)</b>	8	8	8	8
<b>14.4 Packing group</b>	III	III	III	III
<b>14.5 Environmental hazards</b>	No data available	No data available	No data available	No data available

### 14.6 Precautions for user

Check for leaks from containers when unloading product. Avoid contact with product.

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not listed



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## Section 15: Regulatory Information

**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

### *15.1.1 EU regulations*

No data available: Not listed according to Regulation (EC) No. 1272 [CLP]

### *15.1.2 National regulations: Canada, United States and Mexico*

#### US Regulations

**CERCLA Hazardous Substance List (40 CFR 302.4):** Not regulated

#### SARA Title III

**Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):** Not regulated

#### **Section 311/312 (40 CFR 370):**

Acute (Immediate)  Chronic (Delayed)  Fire  Reactive  Pressure Generating

**Section 313 Toxic Release Inventory (40 CFR 372):** Not regulated

**Clean Air Act (CAA) Section 112® Accidental Release Prevention (40 CFR 68.130):** Not regulated

**Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):** Not regulated.

**Drug Enforcement Act:** Not regulated

#### State Regulations

**California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):** Not regulated

**Massachusetts Right-To-Know Lists:** Not regulated

**Michigan Critical Materials List (Michigan Natural Resources and Environmental Protection Act \*Act. 451 of 1994):** Not regulated

**Minnesota Hazardous Substances List:** Not regulated

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**New Jersey Right-To-Know Lists:** Yes

**Pennsylvania Right-To-Know Lists:** Yes

**Rhode Island Right-To-Know Lists:** Not regulated

**Canadian Controlled Products Regulations:**

This product has been classified according to the hazard criteria of the Canadian Controlled Products Regulations, Section 33, and the MSDS contains all required information.

**WHMIS Classification:** E

**Mexican Dangerous Statement:**

This product is dangerous according to Mexican regulations.

**Inventory Status:** All ingredients are TSCA compliant.

**TSCA**

**TSCA Section 4(a) Final Test Rules & Testing Consent Orders:** Not regulated

**TSCA Section 5(a)(2) Final Significant New Use Rules (SNURs) (40CFR 721, Supt. E):** Not regulated

**TSCA Section 5(e) PMN-Substance Consent Orders:** Not regulated

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D):** Not regulated

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## Section 16: Other Information

### 16.1 Indication of changes

No data available

### 16.2 Abbreviations and acronyms

Not applicable

### 16.3 Key literature references and sources for data

Client information, product MSDS, ECHA website

### 16.4 Classification for mixtures and used evaluation method according to regulation (EC) 1207/2008 [CLP]

Not listed

### 16.5 Relevant R-, H- and EUH-phrases (number and full text)

**H314** Causes severe skin burns and eye damage

**H302** Harmful if swallowed

**H319** Causes serious eye irritation

**H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled

**H290** May be corrosive to metals

**H413** May cause long lasting harmful effects to aquatic life

### 16.6 Training advice

No data available

### 16.7 Further information

National Fire Protection Association	Health Hazard	Fire Hazard	Instability	Special Hazard
NFPA	None	None	None	--

Hazardous Materials Information System	Health Hazard	Flammability	Physical Hazard	Special Hazard
HMIS	1	0	1	NA

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