

## CITRIC ACID

### Material Safety Data Sheet (MSDS)

#### 1. PRODUCT IDENTIFICATION

Product Name: Citric acid  
INCI Name: citric acid  
Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid  
CAS Number: 77-92-9  
EINECS Number: 201-069-1

Eye Contact: highly irritating. May also be erosive & abrasive.  
Skin Contact: causes irritation (burning, itching, redness)  
Ingestion: Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. Large oral dosages may produce gastrointestinal disturbances & calcium deficiency in blood. Chronic or heavy acute ingestion may cause tooth enamel erosion.

#### 2. PHYSICAL & CHEMICAL PROPERTIES

Melting Point: 100°C (212°F)  
Vapor Density, Air= 1: not available  
Vapor Pressure: not available  
Density: 1.542  
Solubility in water: dissolves in water (60g/100ml)  
pH Value: 2.2 (1% solution)  
Appearance & Odor: white powder, no odor

#### 8. FIRST AID MEASURES

Eyes: Irrigate eyes with a heavy stream of water for at least 20 minutes. Seek medical attention if symptoms persist.  
Skin: Wash exposed areas of the body with plenty of water.  
Inhalation: Remove from area of exposure. If breathing is difficult, give oxygen. Seek medical attention if symptoms persist.  
Ingestion: Induce vomiting. Consult medical personnel. Never give anything by mouth to an unconscious person.

#### 3. STABILITY & REACTIVITY

Chemical Stability: stable under normal conditions  
Incompatibility: Metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, potassium tartrate. Will corrode copper, zinc, aluminum and their alloys  
Hazardous Decomposition: biodegradable; burning can produce carbon monoxide and carbon dioxide  
Hazardous Polymerisation: will not occur

#### 9. FIRE FIGHTING MEASURES

Autoignition Point: 1011°C (1852°F)  
Extinguishing Media: water spray, foam, carbon dioxide  
Fire Fighting Procedures: Firefighters should wear full fire-fighting turn-out gear (full Bunker gear) including NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

#### 4. HANDLING & STORAGE

Avoid contact with eyes. Wash thoroughly after handling. As with all chemicals, good industrial hygiene practices should be followed when handling this material.  
Avoid freezing or excessive heat. Do not handle or store near an open flame, heat or other sources of ignition. Keep the container tightly closed and in a cool, well-ventilated place.

#### 10. TOXICOLOGICAL INFORMATION

Acute oral LD50: 3g/kg (rat)  
Dermal/ Eye Irritation: severe at 500-750mg/24h (rabbit)  
Carcinogenicity: none  
Mutagenicity: none

#### 5. ACCIDENTAL RELEASE MEASURES

Isolate spill area immediately. Keep unauthorized personnel away. Ventilate closed spaces before entering. Do not touch or walk through spilled material. Prevent entry into waterways, sewers, basements or confined areas. Surface may become slippery after spillage. Use vacuum or broom sweeping and remove to disposal container. If damp, flush with water.

#### 11. DISPOSAL CONSIDERATIONS

Storage and disposal must be in accordance with applicable local, state & federal disposal regulations. Characterization and compliance with applicable laws are the responsibility solely of the generator.

#### 6. EXPOSURE CONTROLS & PERSONAL PROTECTION

Respiratory Protection: Where exposure likely exceeds acceptable criteria, use NIOSH/OSHA-approved respiratory equipment.  
Protective Clothing: Gloves recommended to prevent prolonged skin contact. Safety glasses, goggles, or face shield recommended for eye protection.  
Other Protective Measures: Employees must practice good personal hygiene, washing exposed areas of skin several times daily and laundering contaminated clothing before re-use.

#### 12. TRANSPORT INFORMATION

DOT Shipping Name: Refer to corresponding hazard class  
ADR/ RIC Code: Refer to corresponding hazard class  
Sea Transport IMDG Code: Refer to corresponding hazard class  
Air Transport IATA: Refer to corresponding hazard class

#### 7. HAZARDS IDENTIFICATION

WARNING: causes severe eye irritation. Irritates also skin & lungs.  
Inhalation: Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath

#### 13. DISCLAIMER

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any other process. Such information is to be the best of the company's knowledge and believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee of any kind, express or implied, is made as to its accuracy, reliability or completeness and we assume no responsibility for any loss, damage or expense, direct or consequential, arising out of use. It is the user's responsibility to satisfy himself as to the suitability & completeness of such information for his own particular use.

ALL DATA HEREIN ARE ALL AS PER OUR SUPPLIER.