

Fisher

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*** MATERIAL SAFETY DATA SHEET ***

Citric Acid, Anhydrous, U.S.P./N.F. (Granular)
05200

*** SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION ***

MSDS Name: Citric Acid, Anhydrous, U.S.P./N.F. (Granular)
Catalog Numbers:
AC40528000, AC40528000, S72836, S72836-1, S728362, A940-1, A940-500,
A94011C, A940250LB, A95-350LB, A95-3, A9520LB, BP339-500, S7299

Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid.
Company Identification: 1. Reagent Labs 07410
Fairlawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

*** SECTION 2 - COMPOSITION, INFORMATION ON INGREDIENTS ***

CAS#	Chemical Name	%	ELINECS#
77-92-9	Citric acid	99.0	201-069-1
Hazard Symbols: Xi			
Risk Phrases: 36/37/38			

*** SECTION 3 - HAZARDS IDENTIFICATION ***

EMERGENCY OVERVIEW

Appearance: White powder.
Caution! Causes respiratory tract irritation. Causes skin irritation. Moisture sensitive. Causes severe eye irritation. May cause skin sensitization by skin contact.
Target Organs: None.

Potential Health Effects

Eye: Causes severe eye irritation and possible injury.

Skin: Causes skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Excessive intake of citric acid may cause erosion of the teeth.

Inhalation: Causes respiratory tract irritation.

Chronic: Repeated exposure may cause sensitization dermatitis.

*** SECTION 4 - FIRST AID MEASURES ***

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid. Do NOT allow victim to rub or keep eyes closed.

Skin: Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation develops or persists. Wash clothing before reuse.

Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove victim from exposure and move to fresh air immediately. If breathing is difficult, give artificial respiration. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased, and only certified personnel using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician:

Treat symptomatically and

*** SECTION 5 - FIRE FIGHTING MEASURES ***

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. This material is in sufficient quantity and reduced particle size is capable of creating a dust explosion.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam. Use

1.955

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agent most appropriate to extinguish fire. Do NOT get water inside containers.
Autoignition Temperature: 1850 deg F (1,010.00 deg C)
Flash Point: Not applicable.
Explosion Limits, upper: 2.29
Explosion Limits, lower: 0
NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

*** SECTION 6 - ACCIDENTAL RELEASE MEASURES ***

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Very fine particles can cause a fire or explosion. Eliminate all ignition sources. Clean up spills immediately, preventing the material from entering the sewer system. Avoid generating dusty conditions. Respiratory protection may be required. Ventilation. Spill may be carefully neutralized with lime (calcium oxide, CaO). Do not get water inside containers.

*** SECTION 7 - HANDLING AND STORAGE ***

Handling: Thoroughly after handling. Use with adequate ventilation. Minimize dust generation. Avoid contact with eyes, nose, skin, and clothing. Keep container tightly closed. Avoid contact with moisture. Do not allow contact with water. Keep from contact with moist air and steam.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

*** SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION ***

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Citric acid	none listed	none listed	none listed

OSHA Vacated PELs:

Citric acid
No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

*** SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES ***

Physical State:

Color: White powder

Odor: Odorless

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Freezing/Melting Point: 153 - 154.5 deg C

Decomposition Temperature: 59.2% (206C)

Solubility in water: 1.6650g/cm3

Specific Gravity/Density: CH807

Molecular Formula: 192.12

1.956

*** SECTION 10 - STABILITY AND REACTIVITY ***

Chemical Stability:
Stable under normal temperatures and pressures.
Conditions to Avoid:
Incompatible materials, dust generation, moisture, exposure to moist air or water.
Incompatibilities with Other Materials:
Oxidizing agents, sulfides (inorganic, e.g. ferric sulfide, lead sulfide, sodium sulfide), metal nitrates, alkali carbonates, potassium persulfate, acetates, bicarbonates.
Hazardous Decomposition Products:
Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.
Hazardous Polymerization: Will not occur.

*** SECTION 11 - TOXICOLOGICAL INFORMATION ***

RTECS#:
CAS# 77-92-9: GE7350000
LD50/LC50:
CAS# 77-92-9: Draize test, rabbit, eye: 750 ug/24H Severe; Draize test, rabbit, skin: 500 mg/24H Mild; Oral, mouse: LD50 = 5040 mg/kg; Oral, rat: LD50 = 3 gm/kg.
Carcinogenicity:
Classification: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology:
No information available.
Teratogenicity:
No information available.
Reproductive Effects:
No information available.
Neurotoxicity:
No information available.
Mutagenicity:
No information available.
Other Studies:
No data available.

*** SECTION 12 - ECOLOGICAL INFORMATION ***

Ecotoxicity:
Fish toxicity: LC100 goldfish 894 mg/l lifetime exposure in hard water, LD0 goldfish 625 mg/l lifetime exposure in hard water (Ellis M.M. Detection and measurement of Stream Pollution 1937, 22, XLVII, 365, US Brit. Fisheries Bull.) Invertebrate toxicity: LD00 Daphnia magna 100 mg/l lifetime exposure in soft water, LD0 Daphnia magna 100 mg/l lifetime exposure in soft water. Toxicity threshold: Pseudomonas putida 485 mg/l (Springmann, G. et al. Water Res. 1980, 14, 231-241).

*** SECTION 13 - DISPOSAL CONSIDERATIONS ***

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste for disposal. Waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series: None listed.

*** SECTION 14 - TRANSPORT INFORMATION ***

US DOT
No information available
Canadian TDG
No information available.

*** SECTION 15 - REGULATORY INFORMATION ***

US FEDERAL
TSCA
CAS# 77-92-9 is listed on the TSCA inventory.
Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.
Chemical Waste Rules
None of the chemicals in this product are under a Chemical Test Rule.
Section 12b
None of the chemicals are listed under TSCA Section 12b.
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
SARA
CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a HPQ.

SARA Codes

CAS# 77-92-9: acute.
Section 313
No chemicals are reportable under Section 313.
Clean Air Act: This material does not contain any hazardous air pollutants. This material does not contain any Class 2 Ozone depleters.
Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
NY
Citric acid is not present on state lists from CA, PA, MN, MA, FL, or California No Significant Risk Level:
None of the chemicals in this product are listed.
European/International Regulations
Hazard Labeling in Accordance with EC Directives
Hazard Symbols: XI
Risk Phrases: R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:
S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 37/39 Wear suitable gloves and eye/face protection.
WGK (Water Danger)/Protection:
CAS# 77-92-9: Protection

United Kingdom Occupational Exposure Limits

United Kingdom Maximum Exposure Limits

Canada

CAS# 77-92-9 is listed on Canada's DSL List.
CAS# 77-92-9 has a WHMIS classification of D2B.
CAS# 77-92-9 is listed on Canada's Ingredient Disclosure List.
Exposure Limits

*** SECTION 16 - ADDITIONAL INFORMATION ***

MSDS Creation Date: 2/09/1999 Revision #4 Date: 3/18/2003

The information above is believed to be accurate and represents the best information available to us. However, we make no warranty of merchantability or any other assurance. We assume no liability resulting from such information, and we assume no liability resulting from any use of the information for their own investigations to determine the suitability of the product for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, however arising, even if the company has been advised of the possibility of such damages.