

spectrum

chemicals & laboratory products

A Division of Spectrum Chemical Mfg. Corp.

Dear Customer,

This File Contains Both The ANSI Material Safety Data Sheet and The GHS Safety Data Sheet For The Same Product

Spectrum is currently transitioning all chemical product labeling from the ANSI¹ format to the GHS² format (see note below). In order to ensure that you receive complete labeling during the transition, we have included both the ANSI MSDS and the GHS SDS in a single file. The ANSI MSDS is given first, followed by the GHS SDS. Please use whichever matches the container label.

Why It Matters:

The complete precautionary labeling for this chemical consists of BOTH the label on the container AND the matching Material Safety Data Sheet (for ANSI labels) or Safety Data Sheet (for GHS labels). Both elements of the labeling [Label + (M)SDS] are written to be read and understood together, so as to provide complete precautionary information. It is intended for you to read and understood BOTH before handling or using the chemical.

Picking the Right One: 2 Easy Ways To Tell Whether Your Container Has an ANSI Label or a GHS Label

- 1) GHS labels: any pictogram displayed in the upper left-hand corner will be inside a red diamond.
ANSI labels: pictograms, if present, will be inside individual black boxes.
- 2) GHS labels: on the bottom of the right-hand panel of the label, locate the Lot Number. Directly to the left will be a string of control characters, followed by a single letter.
For GHS labels, the string of characters will end in "GHS:"

Label in ANSI Format

<p>CAUTION! MAY BE HARMFUL IF SWALLOWED MAY CAUSE EYE AND SKIN IRRITATION MAY AFFECT BEHAVIOR AND METABOLISM</p> <p>Do not taste or swallow. Avoid contact with eyes, skin and clothing. Avoid breathing mist or vapor. Avoid prolonged or repeated exposure. Use with adequate ventilation. Wash thoroughly after handling.</p> <p>FIRST AID: In case of contact, flush affected area with plenty of water for at least 15 minutes. Remove if worn. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If irritation persists, call a physician.</p> <p>KEEP FROM CHILDREN</p>	<p>SPECTRUM CHEMICALS & LABORATORY PRODUCTS</p> <p>BE159 SIZ SY</p> <p>Benzyl Benzoate (Benzoic Acid Phenylmethyl Ester)</p> <p>U.S.P. CAS 120-51-4</p> <p>CAUTION: For manufacturing, processing or repacking. Read and understand the label and Material Safety Data Sheet (MSDS) prior to use.</p> <p>For chemical emergency, call (800)424-9300</p> <p>www.SpectrumChemical.com</p>	<p>$C_{11}H_{12}O_2$ F.W. 212.24</p> <p>Assay 99.0-100.5% Specific Gravity @ 25°C 1.116-1.120 Congealing Temperature Min. 18.0°C Refractive Index @ 20°C 1.565-1.570 Acidity To pass test</p> <p>MAXIMUM LIMITS</p> <p>Aldehyde 0.05% Residual Solvents To pass test</p> <p>LIGHT SENSITIVE. Keep tightly closed in light-resistant containers.</p> <p>FLUSHED WITH NITROGEN</p>
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Lot No. XQ###

SPECTRUM CHEMICAL MFG. CORP. Gardena, CA 90248 • New Brunswick, NJ 08901

CORPORATE OFFICES
14422 South San Pedro Street
Gardena, California 90248
PHONE 310.516.8000
FAX 310.516.9843

Label in GHS Format

WARNING!

- May irritate or sensitize • May cause contact dermatitis by skin effects listed on a MSDS data
- Do not use or breathe • Wear eye protection after handling
- **AVOID AND IF SWALLOWED:** Call a POISON CENTER or doctor/physician if you feel unwell. Never reuse!

KEEP FROM CHILDREN

SPECTRUM™
BE159 SIZ SY
Benzyl Benzoate
(Benzoic Acid Phenylmethyl Ester)
U.S.P.
CAS 129-51-4

Chemical Emergency: (800)474-4088
www.SpectrumChemical.com

$C_{15}H_{14}O_2$ F.W. 212.24

Assay	99.0-100.5%
Specific Gravity @ 25°C	1.116-1.120
Freezing Temperature	Min. 18.0°C
Refractive Index @ 20°C	1.568-1.570
Acidity	To pass test

MAXIMUM LIMITS

Aldehyde	0.05%
Residual Solvents	To pass test

LIGHT SENSITIVE: Keep tightly closed in light-resistant containers.

FLUSHED WITH NITROGEN

Lot No. XQ####

¹ American National Standards Institute

² Globally Harmonized System for Hazard Communication

Sincerely,

Regulatory Affairs

SAFETY DATA SHEET

Preparation Date: 02/05/2015

Revision Date: 02/05/2015

Revision Number: G1

Product identifier

Product code: C1281
Product Name: CITRIC ACID, ANHYDROUS, GRANULAR, FCC

Other means of identification

Synonyms: 2-Hydroxy-1,2,3-propanetricarboxylic acid
CAS #: 77-92-9
RTECS # GE7350000
CI#: Not available

Recommended use of the chemical and restrictions on use

Recommended use: No information available.
Uses advised against No information available

Supplier: Spectrum Chemicals and Laboratory Products, Inc.
14422 South San Pedro St.
Gardena, CA 90248
(310) 516-8000

Order Online At: <https://www.spectrumchemical.com>

Emergency telephone number Chemtrec 1-800-424-9300
Contact Person: Martin LaBenz (West Coast)
Contact Person: Ibad Tirmiz (East Coast)

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Serious eye damage/eye irritation	Category 2A
Specific target organ toxicity (single exposure)	Category 3

Label elements

Warning

Hazard statements

Causes serious eye irritation
May cause respiratory irritation



Hazards not otherwise classified (HNOC)

Not Applicable

Other hazards

May be harmful if swallowed
Causes mild skin irritation

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

If skin irritation occurs: Get medical advice/attention

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed
Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Weight %	Trade Secret
Citric Acid, Anhydrous 77-92-9	77-92-9	100	*

4. FIRST AID MEASURES

First aid measures

General Advice:

Poison information centres in each State capital city can provide additional assistance for scheduled poisons (13 1126)

Skin Contact:

Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention if irritation develops. Consult a physician if necessary.

Eye Contact:

Flush eye with water for 15 minutes. Get medical attention.

Product code: C1281

Product name: CITRIC ACID,
ANHYDROUS, GRANULAR, FCC

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Inhalation: Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed

Symptoms Causes eye irritation. Mild skin irritation. May cause irritation of respiratory tract. Central nervous system effects. May affect the cardiovascular system. May affect respiration.

Indication of any immediate medical attention and special treatment needed

Notes to Physician: Treat symptomatically

Protection of first-aiders

First-Aid Providers: Avoid exposure to blood or body fluids. Wear gloves and other necessary protective clothing. Dispose of contaminated clothing and equipment as bio-hazardous waste

5. FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Carbon dioxide (CO₂). Dry chemical. Water spray mist or foam.

Unsuitable Extinguishing Media: No information available.

Specific hazards arising from the chemical

Hazardous Combustion Products: Carbon oxides

Specific hazards: May be combustible at high temperatures. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Special Protective Actions for Firefighters

Specific Methods: No information available.

Special Protective Equipment for Firefighters: As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions: Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Avoid dust formation. Keep people away from and upwind of spill/leak. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Remove all sources of ignition.

Environmental precautions Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Prevent entry into waterways, sewers, basements or confined areas.

Methods and material for containment and cleaning up

Methods for containment Stop leak if you can do it without risk. Cover with plastic sheet to prevent spreading.

Methods for cleaning up Sweep up and shovel into suitable containers for disposal. Clean contaminated surface thoroughly.

7. HANDLING AND STORAGE

Precautions for safe handling

Technical Measures/Precautions:

Provide sufficient air exchange and/or exhaust in work rooms. Avoid dust formation. Keep away from incompatible materials.

Safe Handling Advice:

Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Keep away from heat and sources of ignition. Avoid dust formation. Do not ingest. Do not breathe vapours/dust. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Technical Measures/Storage Conditions:

Keep container tightly closed in a dry and well-ventilated place. Store at room temperature in the original container. Store away from incompatible materials.

Incompatible Materials:

Oxidizing agents. Reducing agents. Bases. bicarbonates. acetates. sulfides. Potassium Tartrate. metal nitrates. Metals. Aluminum. Copper. Copper alloys. Zinc. zinc alloys. aluminum alloys. alkaline earth carbonates. alkali earth carbonates.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

National occupational exposure limits

United States

Components	OSHA	NIOSH	ACGIH	AIHA WHEEL
Citric Acid, Anhydrous - 77-92-9	None	None	None	None

Canada

Components	Alberta	British Columbia	Ontario	Quebec
Citric Acid, Anhydrous - 77-92-9	None	None	None	None

Australia and Mexico

Components	Australia	Mexico
Citric Acid, Anhydrous 77-92-9	None	None

Appropriate engineering controls

Engineering measures to reduce exposure:

Ensure adequate ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Individual protection measures, such as personal protective equipment

Personal Protective Equipment

- Eye protection:** Safety glasses. Safety glasses with side-shields.
- Skin and body protection:** Long sleeved clothing. Chemical resistant apron. Gloves.
- Respiratory protection:** Effective dust mask. Wear respirator with dust filter..
- Hygiene measures:** Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke.

9. PHYSICAL AND CHEMICAL PROPERTIES

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid.	Appearance: Powder. Granular.	Color: Colorless. White.
Odor: Odorless.	Taste Acid. Strong.	Formula: C6H8O7
Molecular/Formula weight: 192.13	Flash point (°C): No data available	Flashpoint (°C/°F): No information available.
Flash Point Tested according to: Not available	Lower Explosion Limit (%): 0.28 kg/m ³ (dust)	Upper Explosion Limit (%): 2.29 kg/m ³ (dust)
Autoignition Temperature (°C/°F): 1010°C/1850°F (powder)	pH: No information available	Melting point/range(°C/°F): 153.0°C/307.4°F
Boiling point/range(°C/°F): Decomposes	Decomposition temperature(°C/°F): No information available	Specific gravity: 1.665
Bulk density: No information available	Vapor pressure @ 20°C (kPa): No information available	Density (g/cm3): No information available
Evaporation rate: No information available	Vapor density: No information available	VOC content (g/L): No information available
Odor threshold (ppm): No information available	Partition coefficient (n-octanol/water): -1.64	Viscosity: No information available
Miscibility: No information available	Solubility: Soluble in Water Solubility in water: 54.0% w/w at 10 deg C; 59.2% at 20 deg C; 64.3% at 30 deg C; 68.6% at 40 deg C; 70.9% at 50 deg C; 73.5% at 60 deg C; 76.2% at 70 deg C; 78.8% at 80 deg C; 81.4% at 90 deg C; 84.0% at 100 deg C., 3.83X10+5 mg/L at 25 deg C. Very soluble in Ethanol Soluble in Ether Soluble in ethyl acetate Insoluble in Benzene Insoluble in Chloroform	

10. STABILITY AND REACTIVITY

Reactivity

Reacts with bases
Reactive with oxidizing agents
Reacts with reducing agents
Potentially explosive reaction with metal nitrates

Chemical stability

Stability: Stable at normal conditions

Possibility of Hazardous Reactions: Hazardous polymerization does not occur

Conditions to avoid:

Heat. Ignition sources. Incompatible materials. Avoid dust formation. Dust may form explosive mixture in air. Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Incompatible Materials: Oxidizing agents. Reducing agents. Bases. bicarbonates. acetates. sulfides. Potassium Tartrate. metal nitrates. Metals. Aluminum. Copper. Copper alloys. Zinc. zinc alloys. aluminum alloys. alkaline earth carbonates. alkali earth carbonates.

Hazardous decomposition products: Carbon oxides.

Other Information

Corrosivity: Corrosive in presence of aluminum, zinc, copper and their alloys

Special Remarks on Corrosivity: No information available

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Principal Routes of Exposure:
Ingestion. Inhalation.

Acute Toxicity

Component Information

Citric Acid, Anhydrous - 77-92-9

LD50/oral/rat = 3000 mg/kg Oral LD50 Rat (RTECS; LOLI)
6730-12000 mg/kg (EU Chemicals Bureau IUCLID dataset)

LD50/oral/mouse = 5040 mg/kg

LD50/dermal/rabbit = No information available

LD50/dermal/rat = No information available

LC50/inhalation/rat = No information available

LC50/inhalation/mouse = No information available

Other LD50 or LC50 information = 903 mg/kg, intraperitoneal, mouse;

290 mg/kg, intraperitoneal, rat;

42 mg/kg, intravenous, mouse;

330 mg/kg, intravenous, rabbit;

2700 mg/kg, subcutaneous, mouse;

5500 mg/kg, subcutaneous, rat

Product Information

LD50/oral/rat =

VALUE- Acute Tox Oral = 3000mg/kg

LD50/oral/mouse =

Value - Acute Tox Oral = 5040mg/kg

LD50/dermal/rabbit

VALUE-Acute Tox Dermal = No information available

LD50/dermal/rat

VALUE -Acute Tox Dermal = No information available

LC50/inhalation/rat

VALUE-Vapor = No information available

VALUE-Gas = No information available

Product code: C1281

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VALUE-Dust/Mist = No information available

LC50/Inhalation/mouse

VALUE-Vapor = No information available

VALUE - Gas = No information available

VALUE - Dust/Mist = No information available

Symptoms

Skin Contact: Mild skin irritation.

Eye Contact: Causes serious eye irritation. Highly irritating.

Inhalation Irritating to respiratory system. Symptoms may including coughing.
Ingestion Causes gastrointestinal (digestive) tract irritation with nausea, vomiting, and diarrhea. May affect behavior/central nervous system (convulsions, somnolence), and respiration. May affect behavior/central nervous system (ataxia). May affect behavior/central nervous system (tremor, convulsions). May affect respiration (respiratory depression). May affect the cardiovascular system (change in heart rate). May affect the cardiovascular system (hypotension). May cause metabolic acidosis. May cause hypocalcemia. May cause lactic acidosis. May cause hyperkalemia.

Aspiration hazard No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Chronic Toxicity Frequent intake of citrated beverages may cause erosion of dental enamel and irritation of the mucous membranes

Sensitization: No information available

Mutagenic Effects: No information available

Carcinogenic effects: Not considered carcinogenic

Components	ACGIH - Carcinogens	IARC	NTP	OSHA HCS - Carcinogens	Australia - Prohibited Carcinogenic Substances	Australia - Notifiable Carcinogenic Substances
Citric Acid, Anhydrous	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

Reproductive toxicity No data is available

Reproductive Effects: No information available
Developmental Effects: No information available
Teratogenic Effects: No information available

Specific Target Organ Toxicity

STOT - single exposure respiratory system.
STOT - repeated exposure No information available
Target Organs: Respiratory system.

12. ECOLOGICAL INFORMATION

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Ecotoxicity

Ecotoxicity effects: No data available. Aquatic environment.

Citric Acid, Anhydrous - 77-92-9

Freshwater Fish Species Data: 1516 mg/L LC50 *Lepomis macrochirus* 96 h static 1

Water Flea Data: 120 mg/L EC50 *Daphnia magna* 72 h

Persistence and degradability: No information available

Bioaccumulative potential: No information available

Mobility: No information available

13. DISPOSAL CONSIDERATIONS

Disposal Methods

Waste from residues / unused products:

Waste must be disposed of in accordance with Federal, State and Local regulation.

Contaminated packaging:

Empty containers should be taken for local recycling, recovery or waste disposal

Components	RCRA - F Series Wastes	RCRA - K Series Wastes	RCRA - P Series Wastes	RCRA - U Series Wastes
Citric Acid, Anhydrous	None	None	None	None

14. TRANSPORT INFORMATION

DOT

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: Not applicable
Packing Group: None
ERG No: No information available
Marine Pollutant: No data available
DOT RQ (lbs): No information available

TDG (Canada)

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

ADR

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available

Product code: C1281

Product name: CITRIC ACID,
ANHYDROUS, GRANULAR, FCC

14. TRANSPORT INFORMATION

Packing Group: No information available
Subsidiary Risk: No information available
Classification Code: No information available
Description: No information available
CEFIC Tremcard No: No information available

IMO / IMDG

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available
IMDG Page: No information available
Marine Pollutant No information available
MFAG: No information available
Maximum Quantity: No information available

RID

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Classification Code: No information available
Description: No information available

ICAO

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

IATA

UN-No: Not Regulated
Proper Shipping Name: No information available
Hazard Class: No information available
Subsidiary Risk: No information available
Packing Group: No information available
Description: No information available

15. REGULATORY INFORMATION

International Inventories

Components	U.S. TSCA	KOREA KECL	Philippines (PICCS)	Japan ENCS	CHINA	Australia (AICS)	EINECS-No.
<i>Citric Acid, Anhydrous</i>	Present	Present KE-20831	Present	Present (2)-1318	Present[25349]	Present	Present 201-069-1

U.S. Regulations

Citric Acid, Anhydrous

FDA - Food Additives Generally Recognized as Safe (GRAS): 21 CFR 184.1033

Citric Acid, Anhydrous

California Prop. 65: Safe Drinking Water and Toxic Enforcement Act of 1986.

Chemicals Known to the State of California to Cause Cancer:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Chemicals Known to the State of California to Cause Reproductive Toxicity:

This product does not contain a chemical requiring a warning under California Prop. 65. (See table below)

Components	Carcinogen	Developmental Toxicity	Male Reproductive Toxicity	Female Reproductive Toxicity:
Citric Acid, Anhydrous	Not Listed	Not Listed	Not Listed	Not Listed

CERCLA/SARA

Components	CERCLA - Hazardous Substances and their Reportable Quantities	Section 302 Extremely Hazardous Substances and TPQs	Section 302 Extremely Hazardous Substances and RQs	Section 313 - Chemical Category	Section 313 - Reporting <i>de minimis</i>
Citric Acid, Anhydrous	None	None	None	None	None

U.S. TSCA

Components	TSCA Section 5(a)2 - Chemicals With Significant New Use Rules (SNURS)	TSCA 8(d) -Health and Safety Reporting
Citric Acid, Anhydrous	Not Applicable	Not Applicable

Canada

WHMIS hazard class:

E Corrosive material

Citric Acid, Anhydrous

E including 40%

Canada Controlled Products Regulation:

This product has been classified according to the hazard criteria of the CPR (Controlled Products Regulation) and the MSDS contains all of the information required by the CPR.

Components	WHMIS Ingredient Disclosure List -
Citric Acid, Anhydrous	1 %

Inventory

Components	Canada (DSL)	Canada (NDSL)
Citric Acid, Anhydrous	Present	Not Listed

Components	CEPA Schedule I - Toxic Substances	CEPA - 2010 Greenhouse Gases Subject to Mandatory Reporting
Citric Acid, Anhydrous	Not listed	Not listed

EU Classification

Product code: C1281

Product name: CITRIC ACID,
ANHYDROUS, GRANULAR, FCC

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R-phrase(s)

R36 - Irritating to eyes.

R37 - Irritating to respiratory system.

R38 - Irritating to skin.

S -phrase(s)

S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S37 - Wear suitable gloves.

S39 - Wear eye/face protection.

Components	Classification	Concentration Limits:	Safety Phrases
Citric Acid, Anhydrous		No information	

The product is classified in accordance with Annex VI to Directive 67/548/EEC

Indication of danger:

Xi - Irritant.

Xi

**16. OTHER INFORMATION**

16. OTHER INFORMATION



Preparation Date: 02/05/2015
Revision Date: 02/05/2015
Prepared by: Sonia Owen

Disclaimer:

All chemicals may pose unknown hazards and should be used with caution. This Safety Data Sheet (SDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. The physical properties reported in this SDS are obtained from the literature and do not constitute product specifications. Information contained herein does not constitute a warranty, whether expressed or implied, as to the safety, merchantability or fitness of the goods for a particular purpose. Spectrum Chemicals & Laboratory Products, Inc. assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits, arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Spectrum assumes no responsibility for the completeness or accuracy of the information contained herein.

End of Safety Data Sheet

Material Safety Data Sheet

<p>NFPA</p> 	<p>HMIS</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="background-color: #00FFFF;">Health Hazard</td> <td style="text-align: center; border: 1px solid black;">2</td> </tr> <tr> <td style="background-color: #FFC0CB;">Fire Hazard</td> <td style="text-align: center; border: 1px solid black;">1</td> </tr> <tr> <td style="background-color: #FFFF00;">Reactivity</td> <td style="text-align: center; border: 1px solid black;">0</td> </tr> </table>	Health Hazard	2	Fire Hazard	1	Reactivity	0	<p>Personal Protective Equipment</p>  <p style="text-align: center;">See Section 15.</p>
Health Hazard	2							
Fire Hazard	1							
Reactivity	0							

Section 1. Chemical Product and Company Identification		<i>Page Number: 1</i>
Common Name/Trade Name	Citric acid	Catalog Number(s). YY1295, C1282, YY1560, YY1143, C1280, C1281, CI131, CI133 CAS# 77-92-9
Manufacturer	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	RTECS GE7350000 TSCA TSCA 8(b) inventory: Citric acid
Commercial Name(s)	Not available.	CI# Not available.
Synonym	2-Hydroxy-1,2,3-propanetricarboxylic acid	<p style="text-align: center; margin: 0;">IN CASE OF EMERGENCY</p> <p style="text-align: center; margin: 0;">CHEMTREC (24hr) 800-424-9300</p> <p style="text-align: center; margin: 0;">CALL (310) 516-8000</p>
Chemical Name	Citric Acid	
Chemical Family	Not available.	
Chemical Formula	C ₆ H ₈ O ₇	
Supplier	SPECTRUM LABORATORY PRODUCTS INC. 14422 S. SAN PEDRO STREET GARDENA, CA 90248	

Section 2. Composition and Information on Ingredients					
			<i>Exposure Limits</i>		
Name	CAS #	TWA (mg/m ³)	STEL (mg/m ³)	CEIL (mg/m ³)	% by Weight
1) Citric acid	77-92-9				100
Toxicological Data on Ingredients		Citric acid: ORAL (LD50): Acute: 5040 mg/kg [Mouse]. 3000 mg/kg [Rat].			

Section 3. Hazards Identification	
Potential Acute Health Effects	Hazardous in case of eye contact (irritant), of inhalation (lung irritant). Slightly hazardous in case of skin contact (irritant), of ingestion. Corrosive to eyes and skin. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Severe over-exposure can produce lung damage, choking, unconsciousness or death.
Potential Chronic Health Effects	CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to teeth. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage.

Section 4. First Aid Measures

Eye Contact	Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Serious Skin Contact	Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.
Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Serious Inhalation	Not available.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Serious Ingestion	Not available.

Section 5. Fire and Explosion Data

Flammability of the Product	May be combustible at high temperature.
Auto-Ignition Temperature	1010°C (1850°F)
Flash Points	Not available.
Flammable Limits	LOWER: 0.28 Kg/M3 (Dust) UPPER: 2.29 Kg/M3 (Dust)
Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	Slightly flammable to flammable in presence of heat. Non-flammable in presence of shocks.
Explosion Hazards in Presence of Various Substances	Slightly explosive in presence of open flames and sparks. Non-explosive in presence of shocks.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.
Special Remarks on Fire Hazards	As with most organic solids, fire is possible at elevated temperatures
Special Remarks on Explosion Hazards	Fine dust dispersed in air in sufficient concentrations, and in the presences of an ignition source is a potential dust explosion hazard.

Section 6. Accidental Release Measures

Small Spill	Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.
Large Spill	Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7. Handling and Storage

Precautions	Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, reducing agents, metals, alkalis.
Storage	Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.
Personal Protection	Safety glasses. Lab coat. Gloves (impervious). Dust respirator. Be sure to use an approved/certified respirator or equivalent. The dust respirator should be used for conditions where exposure has exceeded recommended exposure limits, dust is apparent, and engineering controls(adequate ventilation) are not feasible.
Personal Protection in Case of a Large Spill	Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
Exposure Limits	No exposure guidelines have been established. ACGIH, NIOSH and OSHA have not developed exposure limits for this product. The exposure limits given below are for particulates not otherwise classified: ACGIH: 10 mg/m ³ TWA (Total Inhalable fraction); 3 mg/m ³ TWA (Respirable fraction) OSHA: 15 mg/m ³ TWA (Total dust); 5 mg/m ³ TWA (Respirable Fraction)

Section 9. Physical and Chemical Properties

Physical state and appearance	Solid. (Crystalline powder. Granular solid.)	Odor	Odorless.
Molecular Weight	192.13 g/mole	Taste	Acid. (Strong.)
pH (1% soln/water)	Not available.	Color	Not available.
Boiling Point	Decomposes.		
Melting Point	153°C (307.4°F)		
Critical Temperature	Not available.		
Specific Gravity	1.665 (Water = 1)		
Vapor Pressure	Not applicable.		
Vapor Density	Not available.		
Volatility	Not available.		
Odor Threshold	Not available.		
Water/Oil Dist. Coeff.	The product is more soluble in water; log(oil/water) = -1.7		
Ionicity (in Water)	Not available.		
Dispersion Properties	See solubility in water, diethyl ether.		
Solubility	Soluble in cold water, hot water, diethyl ether. Insoluble in benzene.		

Section 10. Stability and Reactivity Data

Stability	The product is stable.
Instability Temperature	Not available.
Conditions of Instability	Excess heat, incompatible materials
Incompatibility with various substances	Reactive with oxidizing agents, reducing agents, metals, alkalis.
Corrosivity	Corrosive in presence of aluminum, of zinc, of copper. Non-corrosive in presence of glass.
Special Remarks on Reactivity	Incompatible with oxidizing agents, potassium tartrate, alkali, alkaline earth carbonates and bicarbonates, acetates, and sulfides, metal nitrates
Special Remarks on Corrosivity	Will corrode copper, zinc, aluminum and their alloys.
Polymerization	Will not occur.

Section 11. Toxicological Information

Routes of Entry	Inhalation. Ingestion.
Toxicity to Animals	Acute oral toxicity (LD50): 3000 mg/kg [Rat].
Chronic Effects on Humans	May cause damage to the following organs: teeth.
Other Toxic Effects on Humans	Hazardous in case of inhalation (lung irritant), eyes (irritant) Slightly hazardous in case of skin contact (irritant), of ingestion.
Special Remarks on Toxicity to Animals	LDL[Rabbit] - Route: oral; Dose: 7000mg/kg
Special Remarks on Chronic Effects on Humans	Not available.
Special Remarks on other Toxic Effects on Humans	Acute Potential Health Effects: Skin: Causes mild to moderate skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Eyes: Causes moderate to severe eye irritation and possible injury. Ingestion: May cause gastrointestinal (digestive) tract irritation with nausea, vomiting, diarrhea. Excessive intake may cause erosion of teeth and hypocalcemia (calcium deficiency in blood). May affect behavior/central nervous system (tremor, convulsions, muscle contraction or spasticity). Inhalation: Causes moderate respiratory tract and mucous membrane irritation. Chronic Potential Health Effects: Frequent intake of citrated beverages may cause erosion of dental enamel and irritation of mucous membranes.

Section 12. Ecological Information

Ecotoxicity	Ecotoxicity in water (LC50): 1516 mg/l 96 hours [Fish (Lepomis macrochirus)].
BOD5 and COD	Not available.
Products of Biodegradation	Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.
Toxicity of the Products of Biodegradation	The product itself and its products of degradation are not toxic.
Special Remarks on the Products of Biodegradation	Not available.

Section 13. Disposal Considerations

Waste Disposal Waste must be disposed of in accordance with federal, state and local environmental control regulations.

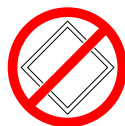
Section 14. Transport Information

DOT Classification Not a DOT controlled material (United States).

Identification Not applicable.

Special Provisions for Transport Not applicable.

DOT (Pictograms)



Section 15. Other Regulatory Information and Pictograms

Federal and State Regulations TSCA 8(b) inventory: Citric acid

California Proposition 65 Warnings California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: No products were found.
California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: No products were found.

Other Regulations EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances (EINECS No. 201-069-1).
Canada: Listed on Canadian Domestic Substance List (DSL).
China: Listed on National Inventory.
Japan: Listed on National Inventory (ENCS).
Korea: Listed on National Inventory (KECI).
Philippines: Listed on National Inventory (PICCS).
Australia: Listed on AICS.

Other Classifications

WHMIS (Canada) CLASS E: Corrosive solid.

DSCL (EEC) R36/37/38- Irritating to eyes, respiratory system and skin. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37/39- Wear suitable gloves and eye/face protection.

HMIS (U.S.A.)

Health Hazard	2
Fire Hazard	1
Reactivity	0
Personal Protection	e

National Fire Protection Association (U.S.A.)

Health Flammability
Reactivity
Specific hazard

WHMIS (Canada) (Pictograms)



DSCL (Europe) (Pictograms)



TDG (Canada)
(Pictograms)



ADR (Europe)
(Pictograms)



Protective Equipment



Gloves (impervious).



Lab coat.



Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.



Safety glasses.

Section 16. Other Information

MSDS Code C4370

References Not available.

Other Special Considerations Not available.

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Verified by Sonia Owen.

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CALL (310) 516-8000

Notice to Reader

All chemicals may pose unknown hazards and should be used with caution. This Material Safety Data Sheet (MSDS) applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this MSDS. It shall be the user's responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this MSDS is based on technical data judged to be reliable, Spectrum Quality Products, Inc. assumes no responsibility for the completeness or accuracy of the information contained herein.