

SECTION 1 - IDENTIFICATION

Product Identifier: Meras Citric Acid 50% Solution
Product Use: Water Treatment
Common Names: 2-Hydroxy-1,2,3-propanetricarboxylic acid

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SECTION 2 - HAZARDS IDENTIFICATION

Classification of the Substance or Mixture:
 Serious Eye Damage/Irritation – Category 2

Signal Word: WARNING



Hazard Statement(s):
 H319: Causes serious eye irritation.
 May form combustible dust concentration in air.

Precautionary Statements:

Prevention-

P262: Do not get in eyes, on skin, or on clothing.
 P264: Wash skin thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response-

P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 P303+353: IF ON SKIN (or hair): Rinse skin with water/shower.
 P304+340: IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
 P305+351+338: IF IN EYES: Rinse continuously 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.
 P363: Wash contaminated clothing before reuse.

Storage-

P403+233: Store in a well ventilated place. Keep container tightly closed.
 P405: Store locked up.

Disposal-

P501: Dispose of contents/container to an approved waste disposal plant.

SECTION 3 - COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	CAS No.	Concentration (%)
Citric Acid	77-92-9	40-60%

SECTION 4 - FIRST-AID MEASURES

Inhalation: Dusts and mists from solutions may cause mild to moderate irritation of the nose and throat. Overexposure could cause coughing, sneezing, and labored breathing. Remove from exposure to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult and IF

TRAINED, give oxygen. Get medical aid. DO NOT use mouth-to-mouth resuscitation without protection.

Skin Contact:

This product may cause moderate irritation of the skin. Citric Acid may cause allergic contact dermatitis with prolonged or repeated contact. Flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.

Eye Contact:

Dust and solution may cause severe irritation to the eyes, with symptoms that include redness, tearing, and pain. Concentrated solutions may be corrosive to the eyes and cause corneal ulcerations. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aids.

Ingestion:

Citric Acid may cause mild gastrointestinal irritation, with symptoms including nausea, diarrhea, vomiting, and abdominal pain. Concentrated solutions may cause necrotic and ulcerative lesions on oral mucous membranes. Chronic ingestion of high concentration Citric Acid can result in erosion of tooth enamel. DO NOT INDUCE VOMITING! Rinse mouth thoroughly with water, if conscious. Never give anything by mouth to a person who is unconscious or having convulsions. Contact a physician or poison control center immediately.

Most Important Symptoms And Effects, Both Acute And Delayed:

The severity of outcome following ingestion may be more related to the time between ingestion and treatment, rather than the amount ingested. Therefore, there is a need for rapid treatment of any ingestion exposure.

Indication Of Any Immediate Medical Attention And Special Treatment Needed:

The severity of outcome following ingestion may be more related to the time between ingestion and treatment, rather than the amount ingested. Therefore, there is a need for rapid treatment of any ingestion exposure.

SECTION 5 - FIRE-FIGHTING MEASURES

Suitable Extinguishing Equipment: Dry Chemical
Carbon Dioxide
Water Fog
Foam

Special Hazards Arising From The Substance Or Mixture:

Thermal decomposition can lead to release of irritating gases and vapors, Carbon Monoxide (CO), Carbon dioxide (CO₂).
Fine dust dispersed in air may ignite. Dust explosibility class = 1. Weak to moderately explosible.

Special Protective Equipment And Precautions For Firefighters:

Firefighters should wear an approved self-contained breathing apparatus (SCBA).
Use water spray to cool unopened containers.
Use caution. See Section 7 for more information on safe handling.
See Section 8 for more information on personal protection equipment. See Section 13 for disposal information.

SECTION 6 - ACCIDENTAL RELEASE MEASURES**Personal Precautions, Protective Equipment, And Emergency Procedures:**

Wear appropriate PPE. Use respirator if thresholds are exceeded.
Keep from contacting skin or eyes.
Ensure adequate ventilation.
Evacuate personnel to safe areas.
Stay upwind of spilled material.

Environmental Precautions:

Prevent further release (leakage/spillage) if safe to do so.
Do not allow product to enter drains.
Do not allow to drain to environment.

Methods And Materials For Containments And Cleaning Up:

Aqueous spillage should be neutralized and treated prior to discharge. Place contaminated material into suitable, closed containers for disposal.
Dispose of contaminated material according to Section 13. Ensure adequate ventilation.
Following product recovery, flush area with water.

Reference To Other Sections: See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment. See Section 13 for information on proper disposal.

SECTION 7 - HANDLING AND STORAGE

Handling Precautions: Avoid contact with eyes, skin, or clothing.
Keep containers closed when not in use.
Keep ignition sources away.
Do not expose containers to open flame, excessive heat, or direct sunlight.
Do not puncture or drop containers.
Handle with care and avoid spillage on the floor.
Keep material out of reach of children.
Keep material away from incompatible materials.
Wash thoroughly after handling.
Ensure adequate ventilation.

Storage Requirements: Keep container tightly closed.
Store in a well-ventilated place.
Avoid storage in direct sunlight.

Incompatible Materials: Keep away from metals. Corrosive to metals (as aqueous solution). Keep away from oxidizing agents. Keep away from strong bases. Keep away from amines.

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Component(s)</u>	<u>CAS No.</u>	<u>PEL</u>	<u>OSHA</u> <u>Ceiling</u>	<u>STEL</u>	<u>NIOSH</u> <u>REL</u>	<u>Ceiling</u>	<u>TLV</u>	<u>ACGIH</u> <u>Ceiling</u>
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Engineering Controls:

All ventilation should be designed in accordance with OSHA standard (29 CFR 1910.94).
Use local exhaust at filling zones and where leakage and dust formation is probable. Use mechanical (general) ventilation for storage areas.
Use appropriate ventilation as required to keep Exposure Limits in Air below TLV & PEL limits.

Personal Protective Equipment:

All safety equipment should be tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU). Type of protective equipment should be selected based on concentration amount and conditions of use of this material. Full-face vapor respirator may be required as backup to engineering controls when proper engineering controls are not in place to keep TLV and PEL limits below defined thresholds. Respiratory protection must comply with 29 CFR 1910.134.

Eye/Face-

- Safety goggles (chemical-resistant).
- Face shield if splashing is possible.

Skin/Body-

- Gloves (PVC, neoprene, or nitrile).
- Apron or coveralls/suit.
- Boots.

Respiratory-

- Air-purifying respirator, if thresholds are exceeded.

General Hygiene Considerations-

- Handle in accordance with good industrial hygiene and safety practice.
- Keep away from foodstuffs, beverages, and feed.
- Wash face, hands, and any exposed skin thoroughly after handling.
- Appropriately dispose of contaminated clothing; wash before re-use, if applicable.
- Avoid contact with eyes, skin, and clothing.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form: Liquid

Color: Clear to pale yellow

Odor: Odorless

Vapor Pressure (Mm Hg): No data available.

Vapor Density: No data available.

Relative Density: 10 lbs/gal

pH: 2.2
Melting/Freezing Point: No data available.
Initial Boiling Point and Boiling Range: No data available.
Flash Point: No data available.
Evaporation Rate: Slower than ether.
Flammability (Solid, Gas): No data available.
Upper/Lower Flammability or Explosive Limits: No data available.

Specific Gravity: 1.19
Solubility in Water: No data available.
Partition Coefficient (N-Octanol/Water): No data available.
Auto Ignition Temperature: N/A
Decomposition Temperature: No data available.
Viscosity: No data available.
Volatiles (% By Weight): No data available.
Volatile Organic Compounds (VOC's): No data available.

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: Not reactive under normal and ambient conditions
Chemical Stability: Stable under normal and ambient conditions.
Possibility of Hazardous Reactions: No data available.
Conditions to Avoid: Heat, flames, ignition sources and incompatibles.
Incompatible Materials: Metal nitrates (potentially explosive reaction), alkali carbonates and bicarbonates, and potassium tartrate. Will corrode copper, zinc, aluminum and their alloys.
Hazardous Decomposition Products: Carbon dioxide and carbon monoxide may form when heated to decomposition.

SECTION 11 - TOXICOLOGICAL INFORMATION

Routes of Entry: Eyes, skin, ingestion,
Acute Toxicity:
 Oral Toxicity (LD₅₀)- 11,700 mg/kg (Rat)
 Dermal Toxicity (LD₅₀)- >2,000 mg/kg (Rat)
Primary Eye Irritation: Causes serious eye irritation.
Primary Skin Irritation: Causes slight irritation.
Sensitization: No data available.
Carcinogenicity:
 IARC- None.
 ACGIH- No data available.
 NTP- No.
 OSHA- No data available.
Reproductive Toxicity: Based on available data, no evidence of reproductive toxicity.
Specific Target Organ Toxicity-Single Exposure: No evidence of toxicity.
Specific Target Organ Toxicity-Repeated Exposure: Based on available data, no toxicity identified at highest exposure levels [NOAEL (rats) 4000mg/kg bw/d].
Aspiration Hazard: Based on available data, no known aspiration hazard.

SECTION 12 - ECOLOGICAL INFORMATION

Ecotoxicity:
 Toxicity to Fish (LC₅₀)- Leuciscus idus: 440 mg/l
 Toxicity to Daphnia and Other Aquatic Invertebrates (EC₅₀)- Water Flea (daphnia magna): 1,535 mg/l
Persistence and Degradability: Readily biodegradable. Inherently biodegradable. 97% and 100% biodegradability in 28d and 19d, respectively (protocols OECD 301 E and OECD 301A, respectively).
Bioaccumulation Potential: Log Kow: -0.2 to 1.8
 BCF: ~3.2
Mobility in Soil: No data available.

Results of PBT and vPvB

Assessment: This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

Other Adverse Effects: No data available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Recommendation: Hazardous wastes shall be managed responsibly.
 Contact a licensed professional waste disposal service to dispose of this material.
 Do not allow product to reach the sewage system.
 Disposal must comply will local, state, and federal regulations.
 Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of an NPDES permit.

Cleansing agent: Water should be used as a cleansing agent to rinse empty containers and/or soiled PPE.

SECTION 14 - TRANSPORTATION INFORMATION

US DOT
 Not regulated.

IMDG
 Not regulated.

IATA
 Not regulated.

Limited Quantity: N/A
Excepted Quantity: N/A

SECTION 15 - REGULATORY INFORMATION

EPA Registration No.:
Cal DPR Registration No.:

<u>Listed Hazardous Chemical</u>	<u>CAS No.</u>	<u>EPCRA EHS</u>	<u>CERCLA HS</u>	<u>CAA 112r</u>	<u>EPCRA 313</u>	<u>Prop 65 Listed</u>
		<u>RQ (lbs)</u>	<u>TPQ (lbs)</u>	<u>RQ (lbs)</u>	<u>TQ (lbs)</u>	

Legend

EPCRA- Emergency Planning and Community Right-to-Know Act
 CERCLA- Comprehensive Environmental Response, Compensation and Liability Act
 CAA- Clean Air Act
 RQ- Release Quantity
 TPQ- Threshold Planning Quantity
 EPA- Environmental Protection Agency
 DPR- Department of Pesticide Registration

SECTION 16 - OTHER INFORMATION

NFPA



NFPA Rating Explanation Guide					
RATING NUMBER	HEALTH HAZARD	FLAMMABILITY HAZARD	INSTABILITY HAZARD	RATING SYMBOL	SPECIAL HAZARD
4	Can be lethal	Will vaporize and readily burn at normal temperatures	May explode at normal temperatures and pressures	ALK	Alkaline
3	Can cause serious or permanent injury	Can be ignited under almost all ambient temperatures	May explode at high temperature or shock	ACID	Acidic
2	Can cause temporary incapacitation or residual injury	Must be heated or high ambient temperature to burn	Violent chemical change at high temperatures or pressures	COR	Corrosive
1	Can cause significant irritation	Must be preheated before ignition can occur	Normally stable. High temperatures make unstable	OX	Oxidizing
0	No hazard	Will not burn	Stable	☸	Reacts violently or explosively with water
				☸OX	Reacts violently or explosively with water and oxidizing

HMIS III

1 HEALTH

1 FLAMMABILITY

0 REACTIVITY

D PERSONAL PROTECTION

PERSONAL PROTECTION INDEX					
A	☒		G	☒ + ☒ + ☒	
B	☒ + ☒		H	☒ + ☒ + ☒ + ☒	
C	☒ + ☒ + ☒		I	☒ + ☒ + ☒	
D	☒ + ☒ + ☒		J	☒ + ☒ + ☒ + ☒	
E	☒ + ☒ + ☒		K	☒ + ☒ + ☒ + ☒	
F	☒ + ☒ + ☒ + ☒		X	Consult your supervisor or S.O.P. for "SPECIAL" handling directions	
A	n	o	p	q	r
Safety Glasses	Splash Goggles	Face Shield & Eye Protection	Gloves	Boots	Synthetic Apron
t	u	w	y	z	S
Dust Respirator	Vapor Respirator	Dust & Vapor Respirator	Full Face Respirator	Airline Hood or Mask	Full Suit
Additional Information					

No warranty guarantee or representation is made to the accuracy, reliability, or completeness of this SDS. The information provided in this SDS is correct to the best of our knowledge, information, and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification. The 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 process. It is the user's responsibility to satisfy any inquiries as to the suitability of such information for his/her own particular use.