SAFETY DATA SHEET

pHulvic | Date Prepared: 11/12/2026 | Replaces: All Previous

SECTION 1. IDENTIFICATION

Product Name:	pHulvic
Synonyms:	Citric Acid Solution,
Use:	Agricultural, Soil Amendment
Manufacturer:	Chemical Dynamics, Inc.
	4206 Business Lane
	Plant City FL 33566
Phone:	813-752-4950
Chemtrec (Emergency) Phone:	800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Pictogram	Signal Word	Hazard Class	Hazard Category	Hazard Statement
	**WARNING**	Skin Irritation Eye Damage	Cat 2 Cat 2A	Causes skin irritation Causes serious eye irritation.
		Corrosive to metals	Cat 1	May be corrosive to metals
Precautionary Statements:	**Prevention:** Wash thoroughly after handling. Wear protective gloves, protective clothing, chemical splash proof goggles and face protection. Keep only in original containers. **Response:** <u>If on skin</u>: Wash with plenty of water. Take of contaminated clothing and wash before reuse. If skin irritation occurs, get medical attention. <u>If in eyes</u>: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. Absorb spillage to prevent material damage. **Storage:** Store in corrosive resistant container such as polyethylene, polypropylene, fiberglass or 316L stainless steel.			

SECTION 3. COMPOSITION

Material	CAS #	EINECS #	%WT
Citric Acid	77-92-9	201-069-1	33%
Water	7732-18-5	231-791-2	Proprietary blend of materials not classified as hazardous or below de minimus concentration limits

SECTION 4. FIRST AID MEASURES	
General:	In case of persisting adverse effects consult a physician. Treat symptomatically.
Ingestion:	Rinse mouth. Do NOT induce vomiting. Drink large amounts of water. Never give anything by mouth to an unconscious person. Call doctor or poison control center.
Skin Contact:	Wash with plenty of water. Take of contaminated clothing and wash before reuse. If skin irritation occurs, get medical attention.
Inhalation:	Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration and seek prompt medical attention.
Eye Contact:	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing eyes during transport to hospital.
Acute Exposure Symptoms:	Eye contact may cause eye irritation with symptoms including redness, tearing and pain. Skin contact may be irritating, resulting in redness, swelling, skin burns and severe damage. Inhalation of the vapor or mist may cause nose, throat, and respiratory irritation or coughing. When ingested, may cause mild gastrointestinal irritation, with symptoms including nausea, diarrhea, vomiting, and abdominal pain. Repeated ingestion of this solution can result in sensitization to the sun, causing sunburn.
Chronic Exposure Symptoms:	Chronic ingestion may lead to erosion of tooth enamel. Chronic, high concentration overexposure to Citric Acid can result in a reduction of plasma calcium concentration

SECTION 5. FIRE FIGHTING MEASURES	
Extinguishing Media:	This product is non-flammable. Use appropriate media for surrounding fire. Cool containers with water spray to avoid rupture due to thermal expansion.
Specific Hazards:	This product is an aqueous mixture which will not burn. If material is exposed to prolonged heat in a fire, material may release oxides of carbon and acrid vapors. For safety, avoid water spray with full jet to prevent spread of product. If evaporated to dryness, product is combustible.
Protective Equipment and Precautions for Fire-Fighters:	Wear self-contained breathing apparatus (SCBA) and full protective gear. Avoid inhaling combustion products. Fire run-off should be contained to prevent possible environmental damage.
NFPA Rating:	Health: 2, Fire: 0, Reactivity: 0

SECTION 6. ACCIDENTAL RELEASE MEASURES	
Precautions:	Acidic liquid. Isolate area. Keep unnecessary personnel away. Avoid splashing or spraying.
Protective Equipment:	Impervious gloves (rubber, neoprene or nitrile). Chemical splash-proof goggles and face shield. Chemical resistant apron and/or rubber boots may be needed. Use NIOSH approved respirator if vapors or mists are formed.

Containment:	Stop flow of material if safe to do so. Dike area with diatomaceous earth or sand and maximize recovery. Prevent spillage from entering drains, sewers or open bodies of water. Any release to the environment may be subject to reporting requirements.
Clean Up:	Pump into a suitable tank or absorb with diatomaceous earth or sand. Residue can be neutralized slowly with lime. Recover and dispose of residue. Sweep up and place into suitable containers for agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations (See Section 13 of SDS).

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling:	Open containers carefully. Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Do not eat, drink or use tobacco products when handling this material. Apply product in open areas. Keep away from children and pets. Do not contaminate feed, seed or any water sources. Launder work clothes frequently and separate from other laundry.
Conditions for safe storage:	Store in a well-ventilated, cool, dry place, away from sources of intense heat, or where freezing is possible. Storage areas should be made of corrosion resistant materials. Periodic inspection of metallic components for corrosion should be conducted. Store in polyethylene, polypropylene, fiberglass or 316L stainless steel. Keep containers tightly closed when not in use. Do not let product go below 32°F. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.
Incompatibilities:	Avoid storage, piping or handling systems made of copper, zinc, aluminum and their alloys (e.g. brass). Keep away from oxidizing agents, strong bases and amines. See Section 10.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits:	Citric Acid	Not Established	PEL, OSHA
		Not Established	STEL, OSHA
		Not Established	TLV, ACGIH
		Not Established	IDLH, NIOSH
		Not Established	REL, NIOSH
		Not Established	STEL, NIOSH
Engineering Controls:	Provide local exhaust ventilation and wash facilities. Eye wash stations and safety showers required.		
Personal Protective Equipment:	Eyes: Chemical splash-proof goggles and face shield Skin: Impervious gloves (rubber, neoprene or nitrile), long sleeved clothing. Chemically resistant apron is recommended. Respiratory: None required for ambient air concentrations (i.e. in the open under normal agronomic conditions) not exceeding occupational exposure limits. Respiratory protection may be required in the event of a spill in an enclosed area. Wear NIOSH approved respiratory protective equipment when vapor or mists may exist.		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless to pale amber liquid		
Odor:	Slight smokey odor	**UEL / LEL:**	Not Applicable
Odor Threshold:	Not Available	**Vapor Pressure:**	Not Available
pH:	0.5 to 2.0	**Density:**	1.11 to 1.12 g/cm^3
Melting/Freezing Point:	< 0°C (32°F)	**Solubility:**	Water
Boiling Point:	> 100°C (212°F)	**Log_{ow}:**	Not Available
Flash Point:	Not Applicable	**Auto Ignition Temp:**	Not Applicable
Evaporation Rate:	Similar to water	**Decomposition Temp:**	Not Available
Flammability (Solid/Gas):	Not Applicable	**Viscosity**	Not Available

SECTION 10. STABILITY AND REACTIVITY

Reactivity:	Product is acidic.
Chemical Stability:	Stable under normal conditions.
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur. May evolve hydrogen gas when in contact with incompatible metals.
Conditions to avoid:	High temperatures and incompatible materials.
Incompatible Materials:	Amines, Copper, Zinc, Aluminum, Heavy metals, Strong oxidizing agents. Strong bases.
Hazardous Decomposition Products:	Oxides of carbon (e.g. Carbon dioxide, carbon monoxide and aldehydes)

SECTION 11. TOXILOGICAL INFORMATION

Acute Toxicity:	LD50 oral (rat): 3000 mg/kg LD50 oral (mouse): 5040 mg/kg
Likely Routes of Exposure:	Inhalation of mist, eye, and skin contact.
Symptoms and Signs of Exposure:	Eyes: Contact causes eye irritation with redness, tearing and pain. Skin: Citric Acid has been reported to have allergenic properties, and might cause allergic contact dermatitis and sensitization to the sun. Contact with skin may cause irritation resulting in redness, pain and burning sensation. Inhalation: Mists and vapors may be irritating to respiratory system, and may cause coughing. Ingestion: Amounts ingested, incidental to industrial handling, are not expected to cause injury but may be irritating to the gastrointestinal tract. Severe metabolic acidosis, hyperkalemia, hypotension and tachycardia have been reported in a case of significant citric acid ingestion.
Chronic Effects:	Chronic ingestion may lead to erosion of tooth enamel. Chronic, high concentration overexposure to Citric Acid can result in a reduction of plasma calcium concentration.
Carcinogenetic:	None of this product's components are listed by ACGIH, OSHA, IARC, NIOSH, NTP or California Prop 65 as carcinogenic.

Mutagenicity:	Not Available
Reproductive Toxicity:	Not Available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity:	Citric Acid is a naturally occurring chemical and is biodegradable. Citric Acid biodegrades quite rapidly. It is dangerous to aquatic life in high concentrations. Lowers pH in water.
Other Adverse Effects:	Not harmful to ozone layer
Ecotoxicity:	LC50 (48hr) Carcinus maenas (Green or European shore crab): 160 mg/L renewal

SECTION 13. DISPOSAL CONSIDERATIONS

General Information:	As packaged, this product is a D002 corrosive waste per 40 CFR 261; applicable to wastes containing this product.
Disposal Instructions:	Agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations. Container contents should be completely used and the containers rinsed prior to discard. Rinsate should be treated as a corrosive material. Dispose of in accordance with product characteristics at time of disposal. Do not reuse containers.

SECTION 14. TRANSPORT INFORMATION

This material is hazardous as defined by 49 CFR 172.101 by the US Department of Transportation	
Proper Shipping Name:	Corrosive Liquid, acidic, organic N.O.S. (Citric Acid)
Hazard Class:	8
UN Identification #:	3265
Packing Group:	III
Required Label(s):	Corrosive
Emergency Response Guide Number:	153
Special Provisions for Transport	Note: **Not regulated** by the Hazardous Materials Regulations and not subject to placarding when transported by motor vehicle or railcar in packaging constructed of materials that will not react dangerously with or be degraded by the corrosive material. – 49 CFR 173.154(d).
Marine Pollutant:	No

SECTION 15. REGULATORY INFORMATION

TSCA Inventory Status	All intentional ingredients listed on the TSCA inventory.
DSCL (EEC) Status	All intentional ingredients listed on the DSCL inventory.
United States – SARA Hazard Category:	This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act (SARA) and is considered, under applicable definitions, to meet the following categories: Fire – No, Pressure – No, Acute – Yes, Chronic – No, Reactive – No
SARA Title III Information:	This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
Citric Acid CAS No. 77-92-9	CERCLA RQ (pounds): This product contains no Reportable Quantity (RQ) Substances. SARA Reporting, 302: No SARA Reporting, 304: No SARA Reporting, 313: No
Federal Insecticide, Fungicide, and Rodenticide Act	This product is not a pesticide.
State Regulations:	Other state regulations may apply. Check individual state requirements.

SECTION 16. OTHER INFORMATION

Date of Revision:	11/12/2026, revision prepared in accordance with 29 CFR 1910.1200 Appendix D to meet Global Harmonization Standards.
Disclaimer:	The information contained in this SDS refers only to the specific material designated and does not relate to any process or use with any other materials. This information is based on data believed to be accurate and reliable as of the date hereof. It is intended for use by persons possessing technical knowledge at their own discretion and risk. Because safety standards and regulations are subject to change and because Chemical Dynamics, Inc. has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. No warranty, expressed or implied, and no liability is assumed by Chemical Dynamics, Inc. in conjunction with the use of this information. Nothing herein is to be construed as a recommendation to infringe any patents.