

Industrial Chemicals Inc.

2042 Montreat Drive - PO Box 660688 - Birmingham, Alabama 35216

February 13, 2023

Attention: Safety Data Sheet Coordinator

Dear Customer:

Enclosed is the Safety Data Sheet for Citric Acid 50% Solution (NSF) dated February 13, 2023 that provides important health and safety information for this recently purchased product. Since you may redirect the product to more than one area within your location or to another facility, please be sure this information is available to all persons handling and/or using the material.

This Safety Data Sheet has either been updated since you last received it or is for a product not previously purchased from Industrial Chemicals Inc. Please consider it the current version to replace any previous version you may have received. In the event any revisions are made to the Safety Data Sheet, a revised copy will be forwarded for the next purchase.

The distribution of these safety data sheets is part of our continuing Product Stewardship Program of providing information and updating our customers. The regulations promulgated by OSHA for Hazard Communication, 29 CFR 1910.1200 have been considered in the distribution of this Safety Data Sheet.

Should you have any questions please call 205-823-7330 or send email to Regulatory@industrialchem.com.

Thank you,
Industrial Chemicals Inc.

If you prefer to receive safety data sheets by email please provide the company name, contact name, email address and phone number and return this page by fax to 205-278-5822 or email to Regulatory@industrialchem.com

Contact Name

Phone Number

Email Address

Company Name

600482

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Citric Acid 50% Solution (NSF)

Safety Data Sheet

Version 4.0

Revision Date: February 13, 2023

Supersedes: August 19, 2020

Section 1: Product and Company Identification

1.1 GHS Product Identifier

Product Name

Citric Acid 50% Solution (NSF)

1.2 Other Means of Identification

Synonyms

3-carboxy-3-hydroxy pentanedioic acid / 2-hydroxypropane-1,2,3-tricarboxylic acid / 3-hydroxypentanedioic acid-3-carboxylic acid / Hydrogen Citrate

Product Code

600482

1.3 Recommended / Restricted Use

Identified Uses

Chemical Intermediate / Cleaning & Detergent Products / Construction Products / Oil Industry / Textile Industry / Water Treatment / Treatment of Metal Surfaces

Restrictions

Do not use for any purpose other than the one for which it is intended.

1.4 Supplier Detail

Industrial Chemicals, Inc.

P.O. Box 660688

Vestavia, AL 35266-0688

205-823-7330 (Telephone)

205-278-5822 (FAX)

Regulatory@industrialchem.com

1.5 Emergency Phone Numbers

Transportation

800-424-9300 (Chemtrec Account Number: CCN11215)

Other than Transportation

800-476-2449

Section 2: Hazard(s) Identification

2.1 Classification of the Substance or Mixture

GHS Classification in Accordance with 29 CFR 1910 (OSHA HCS)

Serious Eye Damage / Eye Irritation (Category 2B)

2.2 GHS Label Elements, Including Precautionary Statements

Pictogram(s)

None.

Signal Word

Warning

Hazard Statement(s)

H320 Causes eye irritation.

Precautionary Statement(s) – Prevention

P264 Wash affected areas thoroughly after handling.



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Section 2: Hazard(s) Identification - continued

Precautionary Statement(s) – Response

P305 + P351 + P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P317 If eye irritation occurs: Get medical help.

Precautionary Statement(s) – Storage

No Precautionary Statement(s) – Storage

Precautionary Statement(s) – Disposal

No Precautionary Statement(s) – Disposal

2.3 Other Hazards which do not Result in Classification

None known.

Section 3: Composition / Information on Ingredients

3.1 Substances

N/A – This product is not a substance.

3.2 Mixtures

Component	CAS Number	EC Number	Index Number	GHS Classification	Concentration (%)
Citric Acid	77-92-9	201-069-1		H315, H319, H335	50.00

Section 4: First Aid Measures

4.1 Description of Necessary First Aid Measures

General Advice

First aid responders should pay attention to self-protection and use the recommended personal protective equipment when the potential for exposure exists.

Show this Safety Data Sheet to the physician in attendance.

Inhalation

If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately.

If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.

Seek medical attention if adverse health effects persist or are severe.

If unconscious, place in recovery position and seek medical attention immediately.

Maintain an open airway. Loosen tight clothing such as collar, tie, belt or waistband.

Skin Contact

Remove contaminated clothing, jewelry and shoes immediately.

Wash exposed areas immediately with copious amounts of tepid water for at least 20 minutes.

Seek medical attention if irritation develops or persists.

Thoroughly clean and dry contaminated clothing before reuse. Discard contaminated leather goods.

Eye Contact

Immediately flush eyes with copious amounts of tepid water, occasionally lifting the upper and lower eyelids, for at least 20 minutes.

Remove contact lenses, if present and easy to do, after first two minutes and continue rinsing.

Seek prompt medical attention, preferably from an ophthalmologist, if irritation develops or persists.



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Section 4: First Aid Measures - continued

Ingestion

Rinse mouth with water if the victim is conscious.

Do NOT induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of material into the lungs, lay the victim on one side with the head lower than the waist.

Do not leave the victim unattended.

Seek medical attention if irritation develops or persists.

Never give anything by mouth to an unconscious or convulsive person.

If unconscious, place in recovery position and seek medical attention immediately.

4.2 Most Important Symptoms / Effects – Acute & Delayed

Inhalation

May be harmful if inhaled. Causes respiratory tract irritation.

Skin Contact

May be harmful if absorbed through skin. Causes skin irritation.

Eye Contact

Causes eye irritation.

Ingestion

May be harmful if swallowed.

Delayed Symptoms / Effects

No data available.

4.3 Indication of Immediate Medical Attention / Special Treatment

Interaction with Other Chemicals Which Enhance Toxicity

None known.

Medical Conditions Aggravated by Exposure

Skin disorders can be aggravated by over-exposure to this product. Inhalation of this product may aggravate respiratory conditions.

Notes to Physician

All treatments should be based on observed signs and symptoms of distress in patient.

Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Provide general supportive measures and treat symptomatically.

Section 5: Firefighting Measures

5.1 Extinguishing Media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Water spray. Dry chemical. Carbon dioxide (CO₂).

Unsuitable Extinguishing Media

Solid water stream.

5.2 Specific Hazards Arising from the Chemical

Fire Hazard

Emits toxic fumes under fire conditions.

Explosion Hazard

Not considered to be an explosion hazard.



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Section 5: Firefighting Measures - continued

Reactivity

No data available.

Hazardous Combustion Products

Carbon oxides (CO_x).

5.3 Special Protective Actions for Firefighters

Precautionary Measures

Do not allow run-off from firefighting to enter drains or water courses.

Firefighting Instructions

Move undamaged containers from immediate hazard area if it can be done safely.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel.

Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks or pipelines.

Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Personal Protective Equipment

Firefighters should use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.

Section 6: Accidental Release Measures

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Non-Emergency Personnel

Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed.

Evacuate non-essential personnel from the hazard area.

Do not touch or walk through spilled material.

Ensure adequate ventilation.

Emergency Responders

Wear appropriate personal protective equipment recommended in Section 8 of this Safety Data Sheet.

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures.

6.2 Environmental Precautions

Take all necessary measures to avoid accidental discharge of product into drains and waterways due to the rupture of containers or failure of transfer systems.

Spills may be reportable to the National Response Center (800-424-8802) and to state and / or local agencies.

6.3 Methods and Materials for Containment and Cleaning Up

Containment

Stop spill at source.

Construct temporary dikes of dirt, sand or any appropriate readily available material to prevent spreading of the material.

Close or cap valves and / or block or plug holes in leaking containers and transfer to another container.

Methods for Cleaning Up – Small Spills

Collect with non-combustible absorbent material (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local, state and national regulations.

Following product recovery, flush the area with water and collect wash water for proper disposal.

Contaminated absorbent may pose the same hazards as the spilled product.

Never return spills to original containers for reuse.



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Section 6: Accidental Release Measures - continued

Methods for Cleaning Up – Large Spills

No data available.

Section 7: Handling and Storage

7.1 Precautions for Safe Handling

Protective Measures

Wear all appropriate personal protection as described in Section 8 of this Safety Data Sheet.

Do not breathe the mist or vapor. Do not get in eyes, on skin or on clothing. Do not taste or swallow.

Use only with adequate ventilation.

Wash thoroughly after handling.

Smoking, eating and drinking should be prohibited in the application area.

Additional Hazards When Processed

"Empty" containers retain product residue and / or vapor and can be hazardous. Do not cut, weld, braze, solder, drill, grind or expose such containers to heat, flames, sparks or other ignition sources.

Do not reuse containers.

Static Accumulation Hazard

Not expected to be a static accumulator.

Advice on General Occupational Hygiene

Do not store, use and / or consume foods, beverages, tobacco products or cosmetics in areas where this material is stored.

Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics or using the toilet.

Wash exposed skin promptly to remove accidental splashes or contact with the material.

7.2 Conditions for Safe Storage, Including any Incompatibilities

Technical Measures

Electrical installations / working materials must comply with the technological safety standards.

Storage Conditions

Store this material in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials, and food and drink.

Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

Protect container(s) against physical damage.

Do not store in unlabeled containers.

Use appropriate containment to avoid environmental contamination.

Shelf Life

Provided proper storage and handling precautions are taken, product should be stable for 24 months from date of manufacture.

Product that is subsequently repackaged, handled and / or delivered by third parties may have a different shelf life and may require third party shelf life studies.

Product past the retest date should be evaluated to confirm that all specifications are within their limits before use.

Incompatibilities

Oxidizers. Alkalis.



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Section 7: Handling and Storage - continued

7.3 Packaging Materials

Suitable Packaging Materials

High density polyethylene (HDPE). Glass.

Unsuitable Packaging Materials

Copper. Copper alloys. Zinc. Zinc alloys. Aluminum. Aluminum alloys.

Section 8: Exposure Controls / Personal Protection

8.1 Control Parameters

Components with Workplace Control Parameters

Chemical Name	CAS No.	Value	Control Parameters	Basis
Citric Acid	77-92-9	TWA	5 mg/m ³	OSHA PEL

8.2 Appropriate Engineering Controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions.

If applicable, use process enclosures, local exhaust ventilation or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Ensure that eyewash stations and safety showers are close to the workstation location.

8.3 Individual Protection Measures, Such as Personal Protective Equipment (PPE)

Respiratory Protection

Use a NIOSH / MSHA approved air-purifying respirator with an appropriate cartridge and / or filter where airborne concentrations are expected to exceed exposure limits (if applicable) or if overexposure has otherwise been determined.

When an air-purifying respirator is not adequate, for exposures above the IDLH or spills and / or emergencies of unknown concentrations, a NIOSH / MSHA approved self-contained breathing apparatus or airline respirator with a full face piece and with an auxiliary self-contained escape pack is required.

A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use.

Hand Protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: other chemicals which may be handled, physical requirements (cut / puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions / specifications provided by the glove supplier.

It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.

In the case of mixtures, consisting of multiple substances, the protection time of the gloves cannot be accurately estimated.

Body Protection

Wear impervious body-covering clothing (coveralls, chemical apron or chemical protective clothing are generally acceptable).

Wear footwear protecting against chemicals (rubber).

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled.

Eye / Face Protection

Safety glasses with side shields. Tightly fitting safety goggles. Face shield (for abnormal processing issues).

Eye and face protection requirements will vary dependent upon the work environment conditions and material handling practices.

Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.



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Section 9: Physical and Chemical Properties

9.1 Physical and Chemical Data

Physical Data

Physical State	Liquid
Color	Clear / Colorless
Odor	Odorless

Chemical Data

Melting Point / Range	Not applicable to liquids.
Freezing Point / Range	No data available.
Initial Boiling Point / Range	No data available.
Flammability (solid, gas)	Not flammable.
Lower Explosion Limit	No data available.
Upper Explosion Limit	No data available.
Flash Point	Not flammable.
Auto-Ignition Temperature	No data available.
Decomposition Temperature	No data available.
pH	1.00 – 2.00
Viscosity (Dynamic)	No data available.
Viscosity (Kinematic)	No data available.
Solubilities	
Water	Soluble
Other Solvents	No data available.
Partition Coefficient n-octanol / water (log value)	No data available.
Vapor Pressure	No data available.
Density / Relative Density (SG)	1.2480
Relative Vapor Density (Air = 1)	No data available.
Particle Characteristics	Not applicable.

Further Safety Characteristics

Explosive Properties	No data available.
Oxidizing Properties	No data available.

Section 10: Stability and Reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product.

10.2 Chemical Stability

The product is chemically stable under standard ambient conditions.

10.3 Possibility of Hazardous Reactions

No dangerous reaction known under conditions of normal use.

10.4 Conditions to Avoid

Incompatible materials.



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Section 10: Stability and Reactivity - continued

10.5 Incompatible Materials

Oxidizers. Alkalis.

10.6 Hazardous Decomposition Products

Carbon oxides (CO_x).

Section 11: Toxicological Information

11.1 Information on Toxicological Effects

Acute Toxicity

Not classified.

Skin Corrosion / Irritation

Not classified.

Serious Eye Damage / Eye Irritation

Causes eye irritation.

Respiratory / Skin Sensitization

Not classified.

Germ Cell Mutagenicity

Not classified.

Carcinogenicity

Not classified.

Reproductive Toxicity

Not classified.

Specific Target Organ Toxicity – Single Exposure

Not classified.

Specific Target Organ Toxicity – Repeated Exposure

Not classified.

Aspiration Hazard

Not classified.

11.2 Information on the Likely Routes of Exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

11.3 Symptoms Related to the Physical, Chemical and Toxicological Characteristics

Inhalation

Irritation to the mucous membranes and upper respiratory tract.

Skin Contact

Stinging, itching, swelling, redness and pain.

Eye Contact

Stinging, reddening, tearing and swelling.

Ingestion

Gastrointestinal discomfort and possible pain.



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Section 11: Toxicological Information - continued

Delayed Symptoms

11.4 Delayed and Immediate Effects / Chronic Effects from Short Term and Long Term Exposure

Inhalation

May be harmful if inhaled. Causes respiratory tract irritation.

Skin Contact

May be harmful if absorbed through skin. Causes skin irritation.

Eye Contact

Causes eye irritation.

Ingestion

May be harmful if swallowed.

11.5 Numerical Measures of Toxicity

Chemical Name	LD ₅₀ Oral	LD ₅₀ Dermal	LC ₅₀ Inhalation
Citric Acid	2700 mg/kg (Rat) OECD 401	> 2000 mg/kg (Rat)	Not listed.

11.6 Interactive Effects

No data available.

11.7 Other Information

No data available.

Section 12: Ecological Information

12.1 Toxicity

Ecotoxicity

Chemical Name	Freshwater Fish	Daphnia	Freshwater Algae	Bacteria
Citric Acid	Leuciscus idus (golden orfe) LC ₅₀ = 440 mg/L 48 Hrs. Static Test OECD 203	Daphnia magna (water flea) EC ₅₀ = 1535 mg/L 24 Hrs. Static Test	Scenedesmus quadricauda (green algae) NOEC = 425 mg/L 8 Days Static Test	Pseudomonas putida (saprotrophic soil bacterium) TT = > 10,000 mg/L

12.2 Persistence and Degradability

Persistence

No data available.

Biodegradability

This material is expected to be biodegradable.

12.3 Bioaccumulative Potential

Partition Coefficient: n-octanol / water

log P_{ow}: - 1.8 to 0.2

Remarks: Calculation

Bioaccumulation

Accumulation is not expected.



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Section 12: Ecological Information - continued

12.4 Mobility in Soil

Stability in Soil – Product as Supplied

Adsorbs on soil.

12.5 Other Adverse Effects

Environmental Fate and Pathways

No data available.

Results of PBT and vPvB Assessment

No data available.

Endocrine Disrupting Potential

No data available.

Adsorbed Organic Bound Halogens (AOX)

No data available.

Ozone-Depletion Potential

No data available.

Additional Ecological Information – Product as Supplied

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Section 13: Disposal Considerations

13.1 Disposal Methods

Waste from Residues / Unused Product

The generation of waste should be avoided or minimized wherever possible.

Disposal of this product should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Dispose of surplus and non-recyclable products via a licensed waste disposal contractor.

Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Contaminated Packaging

Waste packaging should be recycled.

Incineration or landfill should only be considered when recycling is not feasible.

This container must be disposed of in a safe way.

Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues.

Recycling

Store containers and offer for recycling of material when in accordance with the local regulations.

13.2 RCRA Waste Codes

Under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product, should be classified as a hazardous waste.



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Section 14: Transport Information

14.1 Transportation Classifications

Transport Data

Classification	DOT	TDG	IMDG	IATA
Identification Number	N/A	N/A	N/A	N/A
Proper Shipping Name	N/A	N/A	N/A	N/A
Transport Hazard Class	N/A	N/A	N/A	N/A
Hazard Label	N/A	N/A	N/a	N/A
Packing Group	N/A	N/A	N/A	N/A
Environmental Hazards	N/A	N/A	N/A	N/A
Emergency Response	ERG Number: N/A	ERAP Index: N/A	EMS: N/A	ERG Code: N/A
Additional Information	N/A	N/A	N/A	N/A

Note: Transportation information provided is for reference only. The shipper / transporter / consignor should consult DOT, IMDG and IATA regulations for detailed requirements and exceptions covering specific container sizes, packaging materials and methods of shipping.

Section 15: Regulatory Information

15.1 Safety, Health and Environmental Regulations Specific for the Product

OSHA Hazard Communication Standard (29 CFR 1910.1200)

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard.

Assessment of Hazard Classes – GHS Criteria

Serious Eye Damage / Eye Irritation

SARA – Section 313 Components (40 CFR 372.65)

Chemical Name	CAS No.	Weight %	Threshold Value

SARA – Section 302 Emergency Planning Extremely Hazardous Substances Threshold Planning Quantity (40 CFR 355)

Chemical Name	CAS No.	Threshold Planning Quantity (Lbs.)

SARA – Section 302 Emergency Planning Extremely Hazardous Substances Reportable Quantity (40 CFR 355)

Chemical Name	CAS No.	Reportable Quantity (Lbs.)

SARA – Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)

Chemical Name	CAS No.	Reportable Quantity (Lbs.)



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Section 15: Regulatory Information - continued

U.S. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

Chemical Name	CAS No.	Reportable Quantity (Lbs.)

Clean Water Act (CWA)

Chemical Name	Hazardous Substance	Priority Pollutant	Toxic Pollutant

Clean Air Act (CAA)

Chemical Name	Hazardous Air Pollutant	Class 1 Ozone Depletor	Class 2 Ozone Depletor

U.S. Department of Homeland Security

Chemical Name	CAS No.	Screening Threshold Quantity

California Proposition 65, Safe Drinking Water and Toxic Enforcement Act of 1986

Chemical Name	CAS No.	Carcinogenicity	Developmental	Reproductive

Other U.S. State Inventories

Chemical Name	CAS No.	MA	NJ	PA	IL	RI

15.2 Global Chemical Inventory Lists

Country	Inventory Name	Listed
United States	Toxic Substance Control Act (TSCA)	Yes
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (KECI / ECL)	Yes
Philippines	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Malaysia	Malaysia Environmentally Hazardous Substances Notification & Registration (EHSNR)	
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	
Mexico	Mexico El Inventario Nacional de Sustancias Quimicas (INSQ)	
Turkey	Turkey Regulation on the Inventory and Control of Chemicals (CICR)	

(Note 1: Yes – All components of this product are in compliance with the inventory requirements administered by the governing country.)

(Note 2: No – One or more components of this product are not on the inventory or are exempt from listing.)



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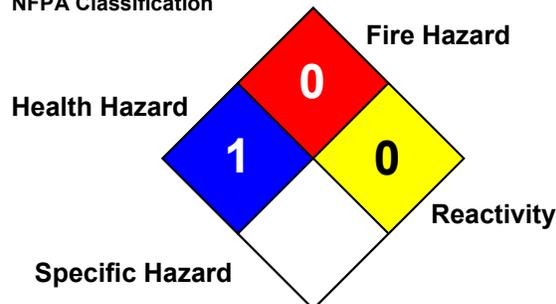
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Section 16: Other Information

16.1 HMIS III Classification

HEALTH	1
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	

16.2 NFPA Classification



16.3 Preparation / Revision Date

February 13, 2023

16.4 Preparation / Revision Information

- Section 3.2 Revised layout.
- Section 4.2 Revised "Inhalation", "Skin Contact", "Eye Contact" and "Ingestion".
- Section 4.3 Revised "Medical Conditions Aggravated by Exposure" and "Notes to Physician".
- Section 5.2 Revised "Fire Hazard".
- Section 5.3 Revised "Precautionary Measures" and "Firefighting Instructions".
- Section 7.1 Added "Static Accumulation Hazard".
- Section 9.1 Revised "Further Safety Characteristics".
- Section 11.3 Revised "Inhalation", "Skin Contact", "Eye Contact" and "Ingestion".
- Section 11.4 Revised "Inhalation", "Skin Contact", "Eye Contact" and "Ingestion".
- Section 14 Revised layout.
- Section 16.3 Revised preparation / revision date.
- Section 16.5 Retitled as "Disclaimer".

Section 16: Other Information - continued

16.5 Disclaimer

The information in this Safety Data Sheet should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. The user must determine the appropriate measures that need to be implemented for the use and handling of this product in the context of the user's operations and use of this product.

No warranty is made as to the product's merchantability or fitness for any particular purpose, or that any suggested use will not infringe any patent. User must determine for himself, by preliminary tests or otherwise, the suitability of this product for his purposes, including mixing with other products. Nothing contained herein shall be construed as granting or extending any license under any patent.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information as of the date of 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 processes, unless specified in the text.

The information contained in this Safety Data Sheet supersedes all previously issued documents on the subject matter covered. If the date on this document is more than three years old, contact the Regulatory Department to confirm that the document is the most current version.

See the additional page of the bill of lading for additional terms and conditions of sale.

End of Safety Data Sheet

Key / Legend to Abbreviations & Acronyms Used in the Safety Data Sheet			
ACGIH	American Conference of Governmental Industrial Hygienists	ADR	Accord Dangerous Routier
ANSI	American National Standards Institute	ASTM	American Society for the Testing of Materials
bw	Body Weight	CAS	Chemical Abstract Services
CERCLA	Comprehensive Environmental Response Compensation and Liability Act	CFR	Code of Federal Regulations
COC	Cleveland Open Cup	DHS	Department of Homeland Security
DIN	Standard of the German Institute for Standardization	DOT	Department of Transportation
EC ₅₀	Half Maximal Effective Concentration	EHS	Extremely Hazardous Substance
EPA	Environmental Protection Agency	ErC ₅₀	Reduction of Growth Rate
ERG	Emergency Response Guide	FDA	Food and Drug Administration
GHS	Globally Harmonized System	HCS	Hazard Communication Standard
HMIS	Hazardous Materials Identification System	IARC	International Agency for Research on Cancer
IATA	International Air Transport Association	IC ₅₀	Half Maximal Inhibitory Concentration
ICAO	International Civil Aviation Organization	IDLH	Immediately Dangerous to Life or Health
IMDG	International Maritime Dangerous Goods	IMO	International Maritime Organization
ISO	International Organization of Standardization	LC ₅₀	Lethal Concentration to 50% of a Test Population
LD ₅₀	Lethal Dose to 50% of a Test Population (Median Lethal Dose)	MSHA	Mine Safety and Health Administration
NAERG	North American Emergency Response Guide	NFPA	National Fire Protection Association
NIOSH	National Institute of Occupational Safety and Health	n.o.s.	Not Otherwise Specified
NOAEC	No Observed (Adverse) Effect Concentration	NOAEL	No Observed (Adverse) Effect Level
NTP	National Toxicology Program	OECD	Organization for Economic Cooperation and Development
OSHA	Occupational Safety and Health Administration	PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible Exposure Limit	PMCC	Pensky-Martens Closed Cup
ppm	Parts Per Million	RCRA	Resource Conservation and Recovery Act
REL	Recommended Exposure Limit	RQ	Reportable Quantity
SADT	Self-Accelerating Decomposition Temperature	SARA	Superfund Amendments and Reauthorization ACT
SCBA	Self-Contained Breathing Apparatus	SDS	Safety Data Sheet
STEL	Short Term Exposure Limit	TCC/Tag	Tagliabue Closed Cup
TDG	Transport of Dangerous Goods (Canada)	TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act	TWA	Time Weighted Average
UN	United Nations	VOC	Volatile Organic Compound
vPvB	Very Persistent and Very Bioaccumulating	WEEL	Workplace Environmental Exposure Levels