

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.19.2014

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Revision date: 02.26.2024

Citric Acid Anhydrous

SECTION 1: Identification

Product Identifier

Product Name: Citric Acid Anhydrous



Recommended Use of the Product and Restriction on Use

Relevant Identified Uses: Food additive.

Uses Advised Against: Not determined or not applicable.

Reasons Why Uses Advised Against: Not determined or not applicable.

Manufacturer or Supplier Details

Supplier:

United States

Cargill Incorporated
15407 McGinty Rd W
Wayzata, MN 55391
1-800-227-4455

Emergency Telephone Number:

United States

VelocityEHS (formerly ChemTel, Inc)
1-800-255-3924 (North America)
+1-813-248-0585 (International)

SECTION 2: Hazard(s) Identification

GHS Classification:

Eye irritation, category 2A

Specific target organ toxicity - single exposure, category 3, respiratory tract irritation

Combustible Dust

Label elements

Hazard Pictograms:



Signal Word: Warning

Hazard statements:

Combustible Dust May form combustible dust concentrations in air.

H319 Causes serious eye irritation

H335 May cause respiratory irritation

Precautionary Statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking

P233 Keep container tightly closed

P240 Ground/bond container and receiving equipment

P264 Wash hands thoroughly after handling

P280 Wear protective gloves, protective clothing, eye protection and face protection.

P261 Avoid breathing dust.

P271 Use only outdoors or in a well-ventilated area

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P302+P352 IF ON SKIN: Wash with plenty of soap and water

P314 Get medical advice/attention if you feel unwell

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

P337+P313 If eye irritation persists: Get medical advice/attention

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

P312 Call a POISON CENTER/doctor/physician/if you feel unwell

P403+P233 Store in a well-ventilated place. Keep container tightly closed

P405 Store locked up

P501 Dispose of contents and container in accordance with local, regional, national, and international regulations.

Hazards Not Otherwise Classified: None

SECTION 3: Composition/Information on Ingredients

Identification	Name	Weight %
CAS Number: 77-92-9	Citric acid	100
CAS Number: N/A	Dust	1

Additional Information: None

SECTION 4: First Aid Measures

Description of First Aid Measures

General Notes:

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

After Inhalation:

Move to fresh air. Oxygen or artificial respiration if needed. Call a physician if symptoms develop or persist.

After Skin Contact:

Remove contaminated clothing and shoes. Rinse skin with copious amounts of water [shower] for several minutes. Launder contaminated clothing before reuse. If symptoms develop or persist, seek medical advice/attention.

After Eye Contact:

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops or persists.

After Swallowing:

Rinse mouth. Get medical attention if symptoms occur.

Most Important Symptoms and Effects, Both Acute and Delayed

Acute Symptoms and Effects:

Eye contact may result in irritation, redness, pain, inflammation, itching, burning and tearing.

Inhalation may have adverse effects on the respiratory tract. Symptoms may include cough, breathing difficulties, sore throat and inflammation of the mucous membrane lining the respiratory tract.

Delayed Symptoms and Effects:

Not determined or not applicable.

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Immediate Medical Attention and Special Treatment

Specific Treatment:

If respiratory symptoms persist, seek medical attention.

Notes for the Doctor:

Treat symptomatically.

SECTION 5: Firefighting Measures

Extinguishing Media

Suitable Extinguishing Media:

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂). Apply extinguishing media carefully to avoid creating airborne dust.

Avoid high pressure media which could cause the formation of a potentially explosive dust-air mixture.

Unsuitable Extinguishing Media:

Do not use water jet as an extinguisher, as this will spread the fire.

Specific Hazards During Fire-Fighting:

Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides.

Special Protective Equipment for Firefighters:

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Special precautions:

In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk.

Use standard firefighting procedures and consider the hazards of other involved materials.

May form combustible dust concentrations in air.

SECTION 6: Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures:

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Use only non-sparking tools. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Wear appropriate protective equipment and clothing during clean-up. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Environmental Precautions:

Avoid discharge into drains, water courses or onto the ground.

Methods and Material for Containment and Cleaning Up:

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Take precautionary measures against static discharge. Use only non-sparking tools. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect dust using a vacuum cleaner equipped with HEPA filter. Large Spills: Wet down with water and dike for later disposal. Shovel the material into waste container. Following product recovery, flush area with water.

Small Spills: Sweep up or vacuum up spillage and collect in suitable container for disposal. Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.

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Reference to Other Sections:

For personal protective equipment see Section 8. For disposal see Section 13.
Sections 8 and 13.

SECTION 7: Handling and Storage

Precautions for Safe Handling:

Minimize dust generation and accumulation. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Explosion-proof general and local exhaust ventilation. Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. Wash hands after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices.

Conditions for Safe Storage, Including Any Incompatibilities:

Keep away from heat, sparks and open flame. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Keep container tightly closed. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces.

SECTION 8: Exposure Controls/Personal Protection

Only those substances with limit values have been included below.

Occupational Exposure Limit Values:

Country (Legal Basis)	Substance	Identifier	Permissible concentration
OSHA	Dust	N/A	PEL: 5 mg/m ³ (Respirable fraction)
	Dust	N/A	PEL: 15 mg/m ³ (Total Dust)
	Dust	N/A	TWA: 5 mg/m ³ (Respirable fraction)
	Dust	N/A	TWA: 15 mg/m ³ (Total Dust)
ACGIH	Dust	N/A	TWA: 3 mg/m ³ (Respirable particles)
	Dust	N/A	TWA: 10 mg/m ³ (Inhalable particles)

Biological Limit Values:

No biological exposure limits noted for the ingredient(s).

Information on Monitoring Procedures:

Not determined or not applicable.

Appropriate Engineering Controls:

Explosion-proof general and local exhaust ventilation. Good general ventilation 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. It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in

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handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use only appropriately classified electrical equipment and powered industrial trucks.

Personal Protection Equipment

Eye and Face Protection:

Wear safety glasses with side shields (or goggles).

Skin and Body Protection:

Hand protection: Wear appropriate chemical resistant gloves. Suitable gloves can be recommended by glove supplier.

Suitable glove barrier materials included: Nitrile/butadiene rubber ("Nitrile" or NBR"); 0.4 mm coating thickness.

Selection of glove protection will depend on the task.

Wear appropriate thermal protective clothing, when necessary.

Respiratory Protection:

If engineering controls do not maintain airborne concentrations below the applicable workplace exposure limits, or to an acceptable level (if exposure limits have not been established), a respirator approved by recognized national standards (or equivalent) must be worn.

General Hygienic Measures:

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

SECTION 9: Physical and Chemical Properties

Information on Basic Physical and Chemical Properties

Appearance	Granules: White.
Odor	Not determined or not available.
Odor threshold	Not determined or not available.
pH	2.2
Melting point/freezing point	307.4 °F (153 °C)
Initial boiling point/range	Not determined or not available.
Flash point (closed cup)	Not determined or not available.
Evaporation rate	Not determined or not available.
Flammability (solid, gas)	Combustible dust.
Upper flammability/explosive limit	Not determined or not available.
Lower flammability/explosive limit	Not determined or not available.
Vapor pressure	Not determined or not available.
Vapor density	Not determined or not available.
Density	1.66 g/cm ³ at 20°C
Relative density	1.6 - 1.7
Solubilities	Soluble in water.
Partition coefficient (n-octanol/water)	-1.72
Auto/Self-ignition temperature	1851.8 °F (1011 °C)
Decomposition temperature	Not determined or not available.

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Dynamic viscosity	Not determined or not available.
Kinematic viscosity	3.904
Explosive properties	Not explosive.
Oxidizing properties	Not oxidizing.

SECTION 10: Stability and Reactivity

Reactivity:

The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical Stability:

Material is stable under normal conditions.

Possibility of Hazardous Reactions:

No dangerous reaction known under conditions of normal use.

Conditions to Avoid:

Keep away from heat, sparks and open flame. Contact with incompatible materials. Minimize dust generation and accumulation.

Incompatible Materials:

Strong oxidizing agents.

Hazardous Decomposition Products:

Carbon monoxide, carbon dioxide.

SECTION 11: Toxicological Information

Acute Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

Name	Route	Result
Citric acid	oral	LD50 Mouse: 5400 mg/kg
	dermal	LD50 Rat: > 2000 mg/kg

Skin Corrosion/Irritation

Assessment: Based on available data, the classification criteria are not met.

Product Data:

Dust or powder may irritate the skin.

Substance Data: No data available.

Serious Eye Damage/Irritation

Assessment:

Causes serious eye irritation.

Product Data:

Dust may irritate the eyes.

Substance Data:

Name	Result
Citric acid	Causes serious eye irritation.

Respiratory or Skin Sensitization

Assessment: Based on available data, the classification criteria are not met.

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Product Data:

Skin sensitization: This product is not expected to cause skin sensitization.

Respiratory sensitization: Not a respiratory sensitizer.

Substance Data: No data available.

Carcinogenicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data: No data available.

International Agency for Research on Cancer (IARC):

Name	Classification
Citric acid	Not Applicable

National Toxicology Program (NTP):

Name	Classification
Citric acid	Not Applicable

OSHA Carcinogens: Not applicable

Germ Cell Mutagenicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

Substance Data: No data available.

Reproductive Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

This product is not expected to cause reproductive or developmental effects.

Substance Data: No data available.

Specific Target Organ Toxicity (Single Exposure)

Assessment:

May cause respiratory irritation.

Product Data:

Not classified.

Substance Data:

Name	Result
Citric acid	May cause respiratory irritation.

Specific Target Organ Toxicity (Repeated Exposure)

Assessment: Based on available data, the classification criteria are not met.

Product Data:

Not classified.

Substance Data: No data available.

Aspiration toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data:

Not an aspiration hazard.

Substance Data: No data available.

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Information on Likely Routes of Exposure:

Inhalation: Dust may irritate respiratory system.

Skin Contact: Dust or powder may irritate the skin.

Eye contact: Dust may irritate the eyes.

Ingestion: May cause discomfort if swallowed.

Symptoms Related to the Physical, Chemical, and Toxicological Characteristics:

Dusts may irritate the respiratory tract, skin and eyes.

Eye contact may include stinging, tearing, redness, swelling, and blurred vision.

Other Information:

No data available.

SECTION 12: Ecological Information

Acute (Short-Term) Toxicity

Assessment:

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product Data: No data available.

Substance Data:

Name	Result
Citric acid	Fish LC50 Pimephales promelas: >100 mg/L (96 hr)

Chronic (Long-Term) Toxicity

Assessment: Based on available data, the classification criteria are not met.

Product Data: No data available.

Substance Data:

Name	Result
Citric acid	Aquatic Plants NOEC Scenedesmus quadricauda: 425 mg/L (8d)

Persistence and Degradability

Product Data: No data available.

Substance Data:

Name	Result
Citric acid	The substance is readily biodegradable. 97% degradation in water, measured by CO ₂ evolution, after 28 days.

Bioaccumulative Potential

Product Data: No data available.

Substance Data:

Name	Result
Citric acid	The substance is not expected to bioaccumulate (log Pow= -1.55 and BCF= 3.2 L/kg- calculated value).

Mobility in Soil

Product Data: No data available.

Substance Data:

Name	Result
Citric acid	The substance is readily biodegradable and has low octanol-water partition co-efficient. Hence, it is highly mobile and the study need not be conducted.

Results of PBT and vPvB assessment

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PBT assessment: This product does not contain any substances that are assessed to be a PBT.

vPvB assessment: This product does not contain any substances that are assessed to be a vPvB.

Substance Data:

PBT assessment:

Citric acid	The substance is not PBT
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vPvB assessment:

Citric acid	The substance is not vPvB
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Other Adverse Effects:

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal Considerations

Disposal Methods:

Disposal instructions: Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Local disposal regulations: Dispose in accordance with all applicable regulations. Hazard waste code: The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Contaminated packages:

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport Information

United States Transportation of Dangerous Goods (49 CFR DOT)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

International Maritime Dangerous Goods (IMDG)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None
Special Precautions for User	None

International Air Transport Association Dangerous Goods Regulations (IATA-DGR)

UN Number	Not regulated
UN Proper Shipping Name	Not regulated
UN Transport Hazard Class(es)	None
Packing Group	None
Environmental Hazards	None

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Special Precautions for User

None

SECTION 15: Regulatory Information

United States Regulations

Inventory Listing (TSCA):

77-92-9	Citric acid	Listed - Active
N/A	Dust	Not Listed

Significant New Use Rule (TSCA Section 5): None of the ingredients are listed.

Export Notification under TSCA Section 12(b): None of the ingredients are listed.

SARA Section 302 Extremely Hazardous Substances: None of the ingredients are listed.

SARA Section 313 Toxic Chemicals: None of the ingredients are listed.

CERCLA: None of the ingredients are listed.

RCRA: None of the ingredients are listed.

Section 112(r) of the Clean Air Act (CAA): None of the ingredients are listed.

Massachusetts Right to Know: None of the ingredients are listed.

New Jersey Right to Know: None of the ingredients are listed.

New York Right to Know: None of the ingredients are listed.

Pennsylvania Right to Know: None of the ingredients are listed.

California Proposition 65: None of the ingredients are listed.

Additional information: Not determined.

SECTION 16: Other Information

Abbreviations and Acronyms: None

Disclaimer:

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Revision Notes:

Revision Date	Notes
2014-06-19	Issue date
2024-01-26	Version # 11; Section 2, GHS classification update.

Additional information:

Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.

End of Safety Data Sheet