

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 1 of 9

Revision date: 07.13.2023

50% Citric acid

SECTION 1: Identification

Product Identifier

Product Name: 50% Citric acid



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

Label elements

Hazard Pictograms:



Signal Word: Warning

Hazard statements:

H319 Causes serious eye irritation

H335 May cause respiratory irritation

Precautionary Statements:

P264 Wash hands thoroughly after handling

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

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P271 Use only outdoors or in a well-ventilated area

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

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 2 of 9

Revision date: 07.13.2023

50% Citric acid

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	50
CAS Number: 7732-18-5	Water	50

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:

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Call a POISON CENTRE or doctor/physician if you feel unwell.

After Skin Contact:

Remove contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

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:

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.

Causes eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision.

Delayed Symptoms and Effects:

Effects are dependent on exposure (dose, concentration, contact time).

Immediate Medical Attention and Special Treatment

Specific Treatment:

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

Notes for the Doctor:

Treat symptomatically.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 3 of 9

Revision date: 07.13.2023

50% Citric acid

SECTION 5: Firefighting Measures

Extinguishing Media

Suitable Extinguishing Media:

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable Extinguishing Media:

Do not use water stream as an extinguisher, as this may spread fire.

Specific Hazards During Fire-Fighting:

During fire, gases hazardous to health may be formed such as: Carbon oxides.

Special Protective Equipment for Firefighters:

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

Special precautions:

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

No unusual fire or explosion hazards noted.

In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

SECTION 6: Accidental Release Measures

Personal Precautions, Protective Equipment, and Emergency Procedures:

In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

In the event of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers.

Environmental Precautions:

Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

Methods and Material for Containment and Cleaning Up:

Use water spray to reduce vapours or divert vapour cloud drift. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, dry sand or earth to soak up the product and place into a container for later disposal. Following product recovery, flush area with water.

Small Spills: 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.

Reference to Other Sections:

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

SECTION 7: Handling and Storage

Precautions for Safe Handling:

Provide adequate ventilation. Avoid contact with eyes, skin, and clothing. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Wash contaminated clothing before reuse. Observe good industrial hygiene practices. Use care in handling/storage.

Conditions for Safe Storage, Including Any Incompatibilities:

Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

SECTION 8: Exposure Controls/Personal Protection

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 4 of 9

Revision date: 07.13.2023

50% Citric acid

Only those substances with limit values have been included below.

Occupational Exposure Limit Values:

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

Biological Limit Values:

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

Information on Monitoring Procedures:

Not determined or not applicable.

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. Eye wash facilities and emergency shower must be available when handling this product.

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. Nitrile, butyl rubber or neoprene gloves are recommended.

Thermal hazards: Wear appropriate thermal protective clothing, when necessary.

Respiratory Protection:

In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygienic Measures:

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	Liquid: Clear to yellow.
Odor	Odourless.
Odor threshold	Not determined or not available.
pH	0.6
Melting point/freezing point	Not determined or not available.
Initial boiling point/range	>100°C (>212°F)
Flash point (closed cup)	Not determined or not available.
Evaporation rate	Not determined or not available.
Flammability (solid, gas)	Not determined or not available.
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	Not determined or not available.
Relative density	1.24

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 5 of 9

Revision date: 07.13.2023

50% Citric acid

Solubilities	Soluble in water.
Partition coefficient (n-octanol/water)	Not determined or not available.
Auto/Self-ignition temperature	Not determined or not available.
Decomposition temperature	Not determined or not available.
Dynamic viscosity	Not determined or not available.
Kinematic viscosity	Not determined or not available.
Explosive properties	Not explosive.
Oxidizing properties	Not oxidising.

SECTION 10: Stability and Reactivity

Reactivity:

Reacts violently with strong alkaline substances. This product may react with reducing agents.

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, hot surfaces, sparks, open flames, and other ignition sources. Contact with incompatible materials. Do not mix with other chemicals.

Incompatible Materials:

Bases. Reducing 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:

Brief contact may cause slight skin irritation with local redness.

Substance Data: No data available.

Serious Eye Damage/Irritation

Assessment:

Causes serious eye irritation.

Product Data:

May cause severe eye irritation which may be slow to heal.

Substance Data:

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 6 of 9

Revision date: 07.13.2023

50% Citric acid

Name	Result
Citric acid	Causes serious eye irritation.

Respiratory or Skin Sensitization

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

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:

Species	Result
	This product is not expected to cause carcinogenetic effects.

Substance Data: No data available.

International Agency for Research on Cancer (IARC):

Name	Classification
Citric acid	Not Applicable
Water	Not Applicable

National Toxicology Program (NTP):

Name	Classification
Citric acid	Not Applicable
Water	Not Applicable

OSHA Carcinogens: Not applicable

Germ Cell Mutagenicity

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

Product Data:

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

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:

May cause irritation of the upper respiratory tract (nose and throat).

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.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 7 of 9

Revision date: 07.13.2023

50% Citric acid

Product Data:

No data available.

Substance Data: No data available.

Aspiration toxicity

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

Product Data:

No data available.

Substance Data: No data available.

Information on Likely Routes of Exposure:

Inhalation: Prolong inhalation may be harmful. May cause respiratory tract irritation.

Skin contact: May cause skin irritation. Prolong skin contact is unlikely to result in absorption of harmful amounts. Not expected to be a skin sensitizer.

Eye contact: May cause severe eye irritation.

Ingestion: Not expected to be acutely toxic. May cause discomfort if swallowed.

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

Exposure to vapours/mist may cause coughing or wheezing.

Skin contact may cause swelling, and local redness.

Eye contact may cause stinging, tearing, redness, and blurred vision.

Swallowing may cause gastrointestinal irritation.

Other Information:

No data available.

SECTION 12: Ecological Information

Acute (Short-Term) Toxicity

Assessment:

Due to the low pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems. Based on components: Material is toxic to aquatic life on an acute basis.

Product Data: No data available.

Substance Data:

Name	Result
Citric acid	Fish LC50 Pimephales promelas: >100 mg/L (96 hr)
	Aquatic Invertebrates EC50 Dreissena polymorpha: >50 mg/L (48 hr)

Chronic (Long-Term) Toxicity

Assessment:

Due to rapid degradability, long lasting effects are not anticipated.

Product Data: No data available.

Substance Data: No data available.

Persistence and Degradability

Product Data:

This material is readily biodegraded.

Substance Data:

Name	Result
Citric acid	Readily biodegradable in water (97% degradation measured by CO2 evolution after 28 days).

Bioaccumulative Potential

Product Data: No data available.

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 8 of 9

Revision date: 07.13.2023

50% Citric acid

Substance Data:

Name	Result
Citric acid	Low potential for bioaccumulation (BCF: 3.2 L/kg).

Mobility in Soil

Product Data: No data available.

Substance Data: No data available.

Results of PBT and vPvB assessment

Product Data:

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	Substance is not PBT
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vPvB assessment:

Citric acid	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. Waste from residues / unused products: Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.

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

Safety Data Sheet

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Initial Preparation Date: 06.04.2014

Page 9 of 9

Revision date: 07.13.2023

50% Citric acid

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
Special Precautions for User	None

SECTION 15: Regulatory Information

United States Regulations

Inventory Listing (TSCA): All ingredients are listed-active or exempt.

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:

This product has been classified in accordance with OSHA HCS 2012 guidelines. The information provided in this SDS is correct, to the best of our knowledge, based on information available. The information given is designed only as a guidance for safe handling, use, storage, transportation and disposal 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, unless specified in the text. The responsibility to provide a safe workplace remains with the user.

NFPA: 2-0-0

HMIS: 2-0-0

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End of Safety Data Sheet