



Material Safety Data Sheet

NFPA	WHMIS	Personal Protective Equipment	Transport Symbol
Preparation Date: 22-Apr-2009	Revision Date: 22-Apr-2009		Revision Number: 0

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Citric Acid Anhydrous

Product Code: 020410, 020420, 020440

Synonyms:

Acido 2-Hydroxy-1,2,3-Propanetricarboxylic, Acileften, Acido beta-Hydroxytricarballic Citrate, Citreter, Citronensaure, NSC 30279, Acido 2-Hydroxypropanoic, 1,2,3-tricarboxylic, E 330.

Use of the Substance / Preparation:
Food additive

Contact Manufacturer:

Archer Daniels Midland Company
4666 Fares Parkway
Decatur, IL 62526, USA
Telephone Number: 217-424-6200

Emergency Telephone Number:
Chemtrec 1-800-424-9300

2. HAZARDS IDENTIFICATION

Emergency Overview

Irritating to eyes, irritating to skin, Corrosive to metals (as aqueous solution).

Appearance: White Colorless

Physical State: Solid Powder

Odor: Odorless

Potential Health Effects

Principle Routes of Exposure:
Acute Effects

Eyes
Skin
Inhalation
Ingestion

Eye contact, Skin contact, Inhalation, Ingestion.

Contact with eyes may cause irritation.
Avoid contact with skin. Prolonged skin contact may cause skin irritation.
May cause irritation of respiratory tract.
Ingestion may cause irritation to mucous membranes.

Chronic Effects
Aggravated Medical Conditions
Potential Environmental Effects
Toxicological Information

Avoid repeated exposure.
No information available.
See Section 12 for additional ecological information.
See Section 11 for additional toxicological information.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family Acids

The following component(s) in this product are considered hazardous under applicable OSHA (USA), WHMIS (Canada), and/or NOM-002-SCT-2003 (Mexico) regulations

Chemical Name	CAS-No	Weight %	North American Hazard Indicator
Citric acid	77-92-9	99-100	yes

4. FIRST AID MEASURES

General Advice	If symptoms persist, call a physician. Show this safety data sheet to the doctor in attendance.
Eye Contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eyes wide open while rinsing. If symptoms persist, call a physician.
Skin Contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.
Inhalation	Move to fresh air.
Ingestion	Clean mouth with water and afterwards drink plenty of water.
Notes to Physician	Treat symptomatically.
Protection of First-aiders	Use personal protective equipment.

5. FIRE-FIGHTING MEASURES

Flammable Properties	Fine dust dispersed in air may ignite.
Suitable Extinguishing Media	Drychemical. Carbon dioxide (CO ₂). Water spray. Foam. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable Extinguishing Media	No information available.
Hazardous Combustion Products	Carbon monoxide (CO). Carbon dioxide (CO ₂). Thermal decomposition can lead to release of irritating gases and vapours.
Explosion Data	
Sensitivity to mechanical impact	No
Sensitivity to static discharge	No
Specific Hazards Arising from the Chemical	None known
Protective Equipment and Precautions for Firefighters	
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.	

NFPA

Health 1

Stability and Reactivity 0

Flammability 1

Physical hazard -

**6. ACCIDENTAL RELEASE MEASURES**

Personal Precautions	Use personal protective equipment.
Environmental Precautions	Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.
Methods for Clean-up	Pick up and transfer to properly labelled containers. Avoid dust formation. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling	Wear personal protective equipment. Avoid contact with skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practices. Do not breathe vapours/dust. Use only in area provided with appropriate exhaust ventilation. Avoid dust formation in confined areas. Fine dust dispersed in air may irritate.
Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labelled containers.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits	This product is not known to contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Engineering Measures	Ensure adequate ventilation, especially in confined areas.
Personal Protective Equipment	
Eye/Face Protection	Tightly fitting safety goggles.
Skin and Body Protection	Long sleeved clothing, Boots, impervious gloves.
Respiratory Protection	Breathing apparatus with filter.
General Hygiene Considerations	When using, do not eat, drink or smoke. Regular cleaning of equipment, work area and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White Colorless	Physical State	Solid Powder
Odor	Odorless	Odor Threshold	No information available
Flash Point	345°C / 653°F	Autoignition Temperature	101°C / 185°F
Boiling point	No information available	Melting/Freezing Point	153°C / 307°F
Flammability Limits in Air	No information available	Explosion Limits	No information available
pH	2.1	Vapor Pressure	No information available
Water Solubility	Soluble	Specific Gravity	No information available
Evaporation Rate	No information available	Vapor Density	No information available
Density	1.865		

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions
Conditions to Avoid	Incompatible products.
Incompatible Materials	Amines, Heavy metals, Strong oxidizing agents, Strong bases.
Hazardous Decomposition Products	No information available
Possibility of Hazardous Reactions	Hazardous polymerization does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Product Information

LD50 Oral: 3000(rat) mg/kg
 LD50 Dermal: No information available
 LC50 Inhalation: No information available

Toxicology data for the components

Chemical Name	Weight %	LD50 Oral	LD50 Dermal	LC50 Inhalation
Citric acid	99.100	3000 mg/kg Rat		

Chronic Effects

Carcinogenicity

There are no known carcinogenic chemicals in this product.

OSHA: (Occupational Safety & Health Administration)
 Not Listed
 ACGH: (American Conference of Governmental Industrial Hygienists)
 Not Listed
 NTP: (National Toxicity Program)
 Not Listed
 Mexico: (Official Mexican Norm NOM-010-STPS-1999)
 Not Listed
 IARC: (International Agency for Research on Cancer)
 Not Listed

Subchronic Toxicity	No information available.	Irritation	No information available.
Corrosivity	Corrosive to metals (as aqueous solution).	Sensitization	No information available.
Neurological Effects	No information available.	Mutagenic Effects	No information available.
Reproductive Effects	No information available.	Developmental Effects	No information available.
Teratogenicity	No information available.	Target Organ Effects	No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity

Environmental properties

Chemical Name	Acute Fish Toxicity	Daphnia (Water flea)	Fresh Water Algae
Citric acid	96 Hr LC50 Lepomis macrochirus: 1515 mg/L (static)	72 Hr EC50 Daphnia magna: 120 mg/L	

Chemical Name	Weight %	log Pow
Citric acid	99-100	-1.72

Persistence/Degradability	Readily biodegradable.
Bioaccumulation/ Accumulation	No information available.
Mobility	Soluble.

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Hazardous waste. Dispose of in compliance with the laws and regulations pertaining to this product in your jurisdiction.

Contaminated Packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. TRANSPORT INFORMATION

Domestic transport regulations (USA)

DOT Not regulated

Domestic transport regulations (Canada)

TDG Not regulated

Domestic transport regulations (Mexico)

MEX Not regulated

International transport regulations

ICAO Not regulated

IATA Not regulated

IMDGIMO Not regulated

15. REGULATORY INFORMATION**International Inventories**

The components of this product are reported in the following inventories:

Chemical Name	TSCA	DSL	NDSL	EINECS	ELINCS	AICS	ENCS	CHINA	PICCS	KECL	NZLoC
Citric acid	Yes	Yes	No	Yes 201-009-1	No	Yes	Yes 2-1313	Yes	Yes	Yes KE-20331	Yes

Legend

TSCA - Toxic Substances Control Act, Section 8(b) Inventory (USA). DSL - Domestic Substance List (Canada). NDSL - Non Domestic Substances List (Canada). EINECS - European Inventory of Existing Commercial Chemical Substances (EU). ELINCS - European List of Notified Chemical Substances (EU). AICS - Australian Inventory of Chemical Substances (Australia). ENCS - Existing and New Chemical Substances (Japan). CHINA - Chinese Inventory of Existing Chemical Substances (China). PICCS - Inventory of Chemicals and Chemical Substances (Philippines). KECL - Korean Existing and Evaluated Chemical Substances (Korea). NZLoC - New Zealand Inventory of Chemicals (New Zealand).

USA**Federal Regulations****Ozone Depleting Substances:**

No Class I or Class II material is known to be used in the manufacture of, or contained, in this product.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product is not known to contain any chemicals which are subject to the reporting requirements of the Act or regulations contained in 40 CFR 372.

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPs) (see 40 CFR 61)

This product is not known to contain any HAPs.

State Regulations**California Proposition 65**

Proposition 65 chemicals are not expected to be found in this product above those naturally present in their agricultural source. Proposition 65 exempts naturally occurring listed chemicals from an obligation to label.

State Right-to-Know

No known components subject to "Right-to-Know" legislation in the following States:

Chemical Name	Weight %	Illinois	Massachusetts	New Jersey	Pennsylvania	Rhode Island
Citric acid	95-100	No	No	No	No	No

Canada

WHMIS Product Classification
Class E: Corrosive Material.

WHMIS Ingredient Disclosure List IDL**Component Information**

Chemical Name	Weight %	WHMIS IDL	Threshold limits
Citric acid	99-100	Listed	1 %

(NPRI) Canadian National Pollutant Release Inventory
No known component is listed on NPRI.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR.

Mexico

Mexico - Grade Slight risk, Grade 1

16. OTHER INFORMATION

Prepared By	Specialty Food Ingredients
Preparation Date	22-Apr-2009
Revision Date	22-Apr-2009
Revision Summary	Implementation into software system.

Disclaimer:

The information provided on this (M)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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text.

End of (M)SDS