

Citric Acid Anhydrous

SAFETY DATA SHEET

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH); 1272/2008 & 453/2010 (CLP)

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Chemical Name	Citric acid
Trade name	Citric acid Anhydrous
CAS No.	77-92-9
EINECS No.	201-069-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified use(s)	Used as a sour agent, buffering agent and antioxidant in the food industry; a correctant in pharmaceutical industry; used in detergents, buffering and chelating, sizing and as a sequestrant.
Uses advised against	No uses advised against

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1 Regulation (EC) No. 1272/2008 (CLP)	Warning. H319: Causes serious eye irritation
2.1.2 Directive 67/548/EEC & Directive 1999/45/EC	Xi; Irritant. R36

2.2 Label elements

2.2.1 According to Regulation (EC) No. 1272/2008 & 453/2010 (CLP)

Hazard Pictogram



Signal word(s)

Warning

Hazard statement(s)

H319: Causes serious eye irritation

Precautionary statement(s)

P264. Wash hands thoroughly after handling.

P280 Wear eye protection.

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.

2.2.2 According to Directive 67/548/EEC & Directive 1999/45/EC

Hazard Symbol



Irritant

Risk Phrases

R36. Irritating to eye

	Safety Phrases	S26. Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
2.3	Other hazards	Not known
2.4	Additional Information	Not known

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

Composition	%W/W	EC No.	CAS No
Citric acid	99.5 to 100.5	201-069-1	77-92-9

SECTION 4: FIRST AID MEASURES



4.1	Description of first aid measures	
	Inhalation	Move to fresh air.
	Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. If irritation persists, call a physician.
	Eye Contact	Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
	Ingestion	Do NOT induce vomiting. Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Consult a physician.
4.2	Most important symptoms and effects, both acute and delayed	Serious eye damage/eye irritation: Eye Irrit. 2
4.3	Indication of immediate medical attention and special treatment needed	Consult a physician.

SECTION 5: FIRE-FIGHTING MEASURES

5.1	Extinguishing Media	
	5.1.1 Suitable Extinguishing Media	Use alcohol-resistant foam, carbon dioxide, dry powder or water fog.
	5.1.2. Unsuitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
5.2	Special hazards arising from the substance or mixture	Oxides of carbon
5.3	Advice for fire-fighters	In the event of fire, wear self-contained breathing apparatus and wear suitable protective clothing. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations
5.4	Additional information	Explosion hazard from the generation of dust.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1	Personal precautions, protective equipment and emergency procedures	Use personal protective equipment.
6.2	Environmental precautions	Do not flush substance into surface water or sewage system.
6.3	Methods and material for containment and cleaning up	Sweep up or vacuum up spillage and collect in suitable container for disposal.
6.4	Reference to other sections	Section 8
6.5	Additional Information	Not known

SECTION 7: HANDLING AND STORAGE

7.1	Precautions for safe handling	Avoid contact with skin and eyes. Use only in well-ventilated areas. Do not breathe vapours/dust
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7.2	Conditions for safe storage, including any incompatibilities	Keep locked up or in an area accessible only to qualified staff
	Storage	Store in tightly closed original container in a dry, cool and well ventilated place. Keep in original container.
	Incompatible materials	Strong oxidising substances, strong alkalis.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1	Control parameters	
8.1.1	Occupational Exposure Limits	No values assigned
8.1.2	Biological limit values	No values assigned
8.2	PNECs and DNELs	
	DNELs - Health	No true DNEL for systemic toxicity can be derived. Local effects, eye irritation should be considered.

PNEC/PEC – Environment

Compartment	PNEC
Aquatic PNECaqua – freshwater (mg/l)	0.44
PNECaqua - marine water (mg/l)	0.044
PNECfreshwater-sediment (mg/kg d.w.)	3.46. (Equivalent to 0.752 mg/kg wwt)
The PNECmarine-sediment mg/kg d.w.	34.6. (Equivalent to 7.52 mg/kg wwt)
Terrestrial (PNECsoil mg/kg d.w.)	33.1
Sewage treatment plant PNEC STP (mg/l)	>1000
Atmospheric Compartment	Not applicable

8.3	Exposure controls	
8.3.1	Appropriate engineering controls	Minimise the risk of dust inhalation. Provide adequate ventilation.
8.3.2	Personal protection equipment	
	Eye/face protection	Safety glasses with side-shields
		
	Skin protection (Hand protection/ Other)	Avoid contact with skin, eyes and clothing. Wash hands before breaks and at the end of workday. Protective gloves must satisfy the specifications of EU Directive 89/686/EEC and EN 374
		
	Respiratory protection	Provide adequate ventilation. Wear respirator where dust level exceeds 10 mg/m ³ .
		
	Thermal hazards	Not applicable
8.3.3	Environmental Exposure Controls	Do not allow to enter drains, sewers or watercourses
8.3.4	Hygiene measures	Do not smoke in the work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1	Information on basic physical and chemical properties	
	Appearance	Solid, crystalline
	Colour	White
	Odour	Odourless
	pH (Value)	1.7 (100g/l)
	Melting Point	Approx. 153 °C at 1,013 hPa
	Boiling point/boiling range (°C):	Decomposes before boiling

Flash Point (°C)	Not known
Flammability	Non flammable
Density	1.665 g/cm ³ at 20°C
Solubility (Water)	590 g/L at 20°C
Solubility (Other)	Soluble in alcohol
Partition Coefficient (Log Kow: -n-Octanol/water)	-0.2 to -1.8
Decomposition Temperature (°C)	Not known
Explosive properties	Not explosive
Oxidising properties	Not oxidising
9.2 Other information	The fraction below 100 µm = 84.1%; the D50 of the fraction below 100 µm = at 31.99 µm.
Granulometry	pKa: 3.13, 4.76 and 6.4 at 25°C
Dissociation constant	

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity	Reacts with alkaline materials
10.2 Chemical stability	Stable under normal conditions
10.3 Conditions to avoid	Exposure to heat and moisture.
10.4 Incompatible materials	Sodium nitrite, potassium nitrite
10.5 Hazardous Decomposition Product(s)	Oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects	
11.1.1 Substances	
Acute toxicity	
Ingestion LD50 (mouse)	5400 mg/kg bw
Inhalation	No data
Skin Contact. LD50 (dermal):	>2000 mg/kg bw
Skin corrosion/irritation	Mild skin irritant
Eye Contact	Irritating
Respiratory or skin sensitization –skin	Not a sensitizer
Mutagenicity	Not a mutagen
Carcinogenicity	Not a carcinogen
Reproductive toxicity	Not a reproductive toxin
STOT - single exposure	Not known
STOT - repeated exposure	Not known
Aspiration hazard	Not known
11.2 Other information	Not known

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity	
Fish LC50 (48hr)	440 mg/l
D. Magna LC 50 (24hr)	1535 mg/l
Algae (8 d mat. (nominal) based on cell density)	425 mg/l
12.2 Persistence and degradability	Biodegradable
12.3 Bioaccumulative potential	No expected to bioaccumulate
12.4 Mobility in soil	Not applicable
12.5 Results of PBT and vPvB assessment	Not a PBT or a vPvB
12.6 Other adverse effects	Not known

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods	Disposal to licensed waste disposal site in accordance with local Waste Disposal Authority.
13.2 Additional Information	Not known

SECTION 14: TRANSPORT INFORMATION

14.1	Land transport (ADR/RID)	Not subject to transport regulations.
14.2	Sea transport (IMDG)	Not subject to transport regulations.
14.3	Air transport (ICAO/IATA)	Not subject to transport regulations.
14.4	Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not known

SECTION 15: REGULATORY INFORMATION

15.1	Safety, health and environmental regulations/legislation specific for the substance or mixture substance	
15.1.1	EU regulations	User to follow EU directives and regulations
	Authorisations and/or restrictions on use	Not applicable
15.1.2	National regulations	User to follow national regulations

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: Version 1.

LEGEND

LTEL	Long Term Exposure Limit
STEL	Short Term Exposure Limit
STOT	Specific Target Organ Toxicity
DNEL	Derived No Effect Level
PNEC	Predicted No Effect Concentration

References:

Chemical Safety Report for citric acid and citrates
Regulation (EC) No. 1272/2008 & 453/2010 (CLP)
Directive 67/548/EEC & Directive 1999/45/EC

Risk Phrases and Safety Phrases

R36: Irritating to eyes

S26: Avoid contact with eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

Hazard statement(s) and Precautionary statement(s)

H319: Causes serious eye irritation

P264: Wash hands thoroughly after handling.

P280: Wear eye protection.

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.

Training advice: Ensure staff and workers receive adequate training with regular updates in the handling of chemicals

Additional Information. Not known

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