Citric acid, monohydrate

Safety Data Sheet

according to Regulation (EU) 2015/830

Date of issue: 01/06/2022 Version: 0.0

Doc No: SDS-910.046/2

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Substance

Substance name : Citric acid, monohydrate

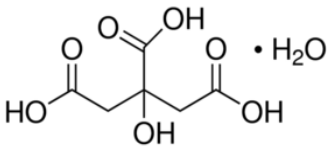
EC no : 201-069-1

CAS No : 5949-29-1

Type of product : Pure substance, Hygroscopic substance. Preventive measures apply to the substance in dry state only

Formula : $C_6H_8O_7*H_2O$

Chemical structure :



Synonyms : 1,2,3-propanetricarboxylic acid, 2-hydroxy-, monohydrate / 2-hydroxy-1,2,3-propanetricarboxylic acid, monohydrate / 2-hydroxypropane-1,2,3-tricarboxylic acid, monohydrate / beta-hydroxytricarballylic acid, monohydrate / beta-hydroxytricarboxylic acid, monohydrate / hydroxytricarballylic acid, monohydrate / Soerensen's buffer substance

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

1.2.1. Relevant identified uses

Use of the substance/mixture : Cleansing product

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

ISOLAB Laborgeräte GmbH
Am Dillhof 2 - 63863 Eschau / GERMANY
Tel: + 49 93 74 / 978 55-0
Fax: +49 93 74 / 978 55-29
prodsafe@isolab.de

1.4. Emergency telephone number

Country	Organisation/Company	Address	Emergency number	Comment
Germany	Giftnotruf der Charité CBF, Haus VIII (Wirtschaftgebäude), UG	Hindenburgdamm 30 12203 Berlin	+49 (0) 30 19240	

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Serious eye damage/eye irritation, Category 2 H319

Full text of hazard classes and H-statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :

GHS07

Signal word (CLP) : Warning

Hazard statements (CLP) : H319 - Causes serious eye irritation

Precautionary statements (CLP) : P280 - Wear protective gloves, eye protection, face protection, protective clothing
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	Product identifier	%
Citric acid, monohydrate	(CAS No) 5949-29-1 (EC no) 201-069-1	99 - 100

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Check the vital functions. Unconscious: maintain adequate airway and respiration. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform resuscitation. Victim conscious with laboured breathing: half-seated. Victim in shock: on his back with legs slightly raised. Vomiting: prevent asphyxia/aspiration pneumonia. Prevent cooling by covering the victim (no warming up). Keep watching the victim. Give psychological aid. Keep the victim calm, avoid physical strain. Depending on the victim's condition: doctor/hospital.

First-aid measures after inhalation : Remove the victim into fresh air. Respiratory problems: consult a doctor/medical service.

First-aid measures after skin contact : Rinse with water. Soap may be used. Do not apply (chemical) neutralizing agents. Take victim to a doctor if irritation persists.

First-aid measures after eye contact : Rinse immediately with plenty of water. Do not apply neutralizing agents. Take victim to an ophthalmologist if irritation persists.

First-aid measures after ingestion : Rinse mouth with water. Immediately after ingestion: give lots of water to drink. Call Poison Information Centre (www.big.be/antigif.htm). Consult a doctor/medical service if you feel unwell. Ingestion of large quantities: immediately to hospital.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation : AFTER INHALATION OF DUST: Dry/sore throat. Coughing. Slight irritation. EXPOSURE TO HIGH CONCENTRATIONS: Irritation of the respiratory tract. Respiratory difficulties.

Symptoms/injuries after skin contact : Red skin. ON CONTINUOUS EXPOSURE/CONTACT: Tingling/irritation of the skin.

Symptoms/injuries after eye contact : Irritation of the eye tissue. ON CONTINUOUS EXPOSURE/CONTACT: Inflammation/damage of the eye tissue.

Symptoms/injuries after ingestion : AFTER ABSORPTION OF HIGH QUANTITIES: Abdominal pain. Vomiting. Coughing. Irritation of the gastric/intestinal mucosa.

Chronic symptoms : ON CONTINUOUS/REPEATED EXPOSURE/CONTACT: Affection/discolouration of the teeth.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Polyvalent foam. AFFF foam. ABC powder. Carbon dioxide.

Unsuitable extinguishing media : Container may slop over if solid jet (water/foam) is applied.

5.2. Special hazards arising from the substance or mixture

Fire hazard : DIRECT FIRE HAZARD. Not easily combustible. In finely divided state: increased fire hazard. INDIRECT FIRE HAZARD. Heating increases the fire hazard. Reactions involving a fire hazard: see "Reactivity Hazard".

Explosion hazard : DIRECT EXPLOSION HAZARD. Fine dust is explosive with air. INDIRECT EXPLOSION HAZARD. Dust cloud can be ignited by a spark. Reactions with explosion hazards: see "Reactivity Hazard".

5.3. Advice for firefighters

Precautionary measures fire : Exposure to fire/heat: keep upwind. Exposure to fire/heat: have neighbourhood close doors and windows.

Firefighting instructions	:	Cool tanks/drums with water spray/remove them into safety.
Protection during firefighting	:	Heat/fire exposure: compressed air/oxygen apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment	:	Gloves. Safety glasses. Protective clothing. Dust cloud production: compressed air/oxygen apparatus. See "Material-Handling" to select protective clothing.
Emergency procedures	:	Mark the danger area. Prevent dust cloud formation, e.g. by wetting. No naked flames. Wash contaminated clothes.
Measures in case of dust release	:	In case of dust production: keep upwind. Dust production: have neighbourhood close doors and windows. Dust production: stop engines and no smoking. In case of dust production: no naked flames or sparks. Dust: spark-/explosionproof appliances/lighting equipment.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

For containment	:	Contain released substance, pump into suitable containers. Consult "Material-handling" to select material of containers. Plug the leak, cut off the supply. Knock down/dilute dust cloud with water spray. Powdered form: no compressed air for pumping over spills.
Methods for cleaning up	:	Prevent dust cloud formation. Scoop solid spill into closing containers. See "Material-handling" for suitable container materials. Powdered: do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Wash clothing and equipment after handling.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Thoroughly clean/dry the installation before use. Powdered form: no compressed air for pumping over. Avoid raising dust. Use earthed equipment. Keep away from naked flames/heat. Finely divided: spark- and explosionproof appliances. Finely divided: keep away from ignition sources/sparks. Observe normal hygiene standards. Keep container tightly closed. Carry operations in the open/under local exhaust/ventilation or with respiratory protection.

7.2. Conditions for safe storage, including any incompatibilities

Heat and ignition sources	:	KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Information on mixed storage	:	KEEP SUBSTANCE AWAY FROM: reducing agents. (strong) bases. oxidizing agents. water/moisture.
Storage area	:	Store in a dry area. Keep container in a well-ventilated place. Provide the tank with earthing. Keep only in the original container. Store at ambient temperature. Meet the legal requirements.
Special rules on packaging	:	SPECIAL REQUIREMENTS: closing. watertight. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	:	SUITABLE MATERIAL: polyethylene. polypropylene. MATERIAL TO AVOID: aluminium. copper. zinc.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Materials for protective clothing:

GIVE EXCELLENT RESISTANCE: butyl rubber. natural rubber. neoprene. nitrile rubber. PVC. viton. GIVE GOOD RESISTANCE: polyethylene. GIVE LESS RESISTANCE: No data available. GIVE POOR RESISTANCE: PVA

Hand protection:

Gloves

Eye protection:

Safety glasses. In case of dust production: protective goggles

Skin and body protection:

Protective clothing

Respiratory protection:

Dust production: dust mask with filter type P1

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Crystalline solid. Powder.
Molecular mass	:	210.14 g/mol
Colour	:	Colourless or white.
Odour	:	Odourless.
Odour threshold	:	No data available
pH	:	1.85 (5 %, 25 °C)
pH solution	:	5 %
Relative evaporation rate (butylacetate=1)	:	No data available
Melting point	:	135 - 152 °C
Freezing point	:	Not applicable
Boiling point	:	decomposition
Flash point	:	Not applicable
Auto-ignition temperature	:	345 °C
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	No data available
Vapour pressure	:	< 0.1 hPa (20 °C)
Relative vapour density at 20 °C	:	No data available
Relative density	:	1.5
Density	:	1.54 g/cm^3 (20 °C)
Solubility	:	Soluble in water. Soluble in ethanol. Soluble in methanol. Soluble in 1-propanol. Soluble in ethylacetate. Soluble in pentanol. Soluble in pentylacetate. Water: 88 g/100ml Ethanol: 50 g/100ml
Log Pow	:	-1.72 (Experimental value)
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosive properties	:	No data available
Oxidising properties	:	No data available
Explosive limits	:	No data available

9.2. Other information

VOC content	:	0 %
Other properties	:	Hygroscopic. Substance has acid reaction.

SECTION 10: Stability and reactivity

10.1. Reactivity

Upon combustion: CO and CO2 are formed. Reacts violently with (some) bases: (increased) risk of fire. Reacts violently with (strong) oxidizers: (increased) risk of fire. Reacts with (strong) reducers.

10.2. Chemical stability

Hygroscopic.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Citric acid, monohydrate (5949-29-1)	
LD50 oral rat	3000 mg/kg (Rat; Literature study)
LD50 dermal rat	> 2000 mg/kg bodyweight (Rat; Experimental value; OECD 402: Acute Dermal Toxicity)

Skin corrosion/irritation : Not classified
pH: 2 (1 %)

Serious eye damage/irritation : Causes serious eye irritation.
pH: 2 (1 %)

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Reproductive toxicity : Not classified

STOT-single exposure : Not classified

STOT-repeated exposure : Not classified

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Classification concerning the environment: not applicable.

Ecology - air : Not classified as dangerous for the ozone layer (Regulation (EC) No 1005/2009). Not included in the list of fluorinated greenhouse gases (Regulation (EC) No 842/2006). TA-Luft Klasse 5.2.1.

Ecology - water : Slightly harmful to fishes (LC50(96h) 100-1000 mg/l). Slightly harmful to invertebrates (EC50: 100 - 1000 mg/l). Slightly harmful to algae. Not harmful to bacteria. pH shift. Nitrification of activated sludge isn't inhibited.

Citric acid, monohydrate (5949-29-1)	
LC50 fish 2	440-760,LC50; 96 h; Pisces
EC50 Daphnia 2	120 mg/l (EC50; 72 h; Daphnia magna)
Threshold limit algae 2	640 mg/l (EC0; 168 h; Scenedesmus quadricauda)

12.2. Persistence and degradability

Citric acid, monohydrate (5949-29-1)	
Persistence and degradability	Readily biodegradable in water. Biodegradable in the soil. No (test)data on mobility of the substance available.
Biochemical oxygen demand (BOD)	0.481 g O^2/g substance
Chemical oxygen demand (COD)	0.665 g O^2/g substance
BOD (% of ThOD)	0.889 (20 days)

12.3. Bioaccumulative potential

Citric acid, monohydrate (5949-29-1)	
Log Pow	-1.72 (Experimental value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle/reuse. Dissolve or mix with a combustible solvent. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery. Treat using the best available techniques before discharge into drains or the aquatic environment.

Additional information : LWCA (the Netherlands): KGA category 03. Hazardous waste according to Directive 2008/98/EC.

European List of Waste (LoW) code : 16 05 08* - discarded organic chemicals consisting of or containing dangerous substances

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
No supplementary information available				

14.6. Special precautions for user

- Overland transport

Not applicable

- Transport by sea

Not applicable

- Air transport

Not applicable

- Inland waterway transport

Not applicable

- Rail transport

Not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

Citric acid, monohydrate is not on the REACH Candidate List

Citric acid, monohydrate is not on the REACH Annex XIV List

VOC content : 0 %

15.1.2. National regulations

Germany

VwVwS Annex reference : Water hazard class (WGK) 1, low hazard to waters (Classification according to VwVwS, Annex 3; ID No. 8248)

WGK remark : Classification water polluting in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 27 July 2005 (Anhang 2)

12th Ordinance Implementing the Federal Immission Control Act - 12.BImSchV : Is not subject of the 12. BImSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : The substance is not listed

SZW-lijst van mutagene stoffen : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid : The substance is not listed

NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling : The substance is not listed

15.2. Chemical safety assessment

No additional information available

SECTION 16: Other information

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
EC50	Median effective concentration
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
PBT	Persistent Bioaccumulative Toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
vPvB	Very Persistent and Very Bioaccumulative

Data sources	:	REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Full text of H- and EUH-statements:	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
H319	Causes serious eye irritation

SDS ISOLAB

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product