

**Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE
COMPANY/UNDERTAKING**

Product identification:

Product Description: Citric Acid Monohydrate

Cat No. : 70490, 96490, 10490,50490,98490,90490, 97490

Synonyms: Citric Acid Monohydrate

CAS-No: 5949-29-1

EC-No.: 201-069-1

Molecular Formula: $C_6 H_8 O_7 \cdot H_2 O$

Product Name	<u>Citric Acid Monohydrate</u>
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SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture:

Classification according to Regulation (EC) No 1272/2008

Eye irritation, Category 2, H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

Label Elements:

Labeling according Regulation (EC) No 1272/2008

Pictogram



Signal word

Warning

Hazard statement(s)

H319 Causes serious eye irritation.

Precautionary statement(s)

Response

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

Reduced labelling (≤125 ml)

Pictograms



Signal word

Warning

CAS-No: 5949-29-1

Other Hazards:

None known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances: Citric Acid Monohydrate

Mixtures:

Component	CAS-No	EC-No.	Weight %
Succinic Acid	5949-29-1	201-069-1	> 99

SECTION 4: FIRST AID MEASURES

Description of first aid measures:

- **General advice**
Consult a physician. Show this safety data sheet to the doctor in attendance.
- **If inhaled**
Fresh air.
- **If Contact with skin**
Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- **In case of eye contact**
Rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.
- **If swallowed**
Immediately make victim drink water (two glasses at most). Consult a physician.

Most important symptoms and effects, both acute and delayed:

Irritant effects, pain, Bloody vomiting

Indication of any immediate medical attention and special treatment needed:

No information Available

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media:

Suitable Extinguishing Media- Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture:

Combustible.

Risk of dust explosion.

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

Advice for firefighters:

In the event of fire, wear self-contained breathing apparatus.

5.4 Further Information:

Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions:

Do not let product enter drains.

Methods and material for containment and cleaning up:

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

Reference to other sections:

For disposal see Sections 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling:

Advice on safe handling

Observe label precautions.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

Conditions for safe storage, including any incompatibilities:

Requirements for storage areas and containers

No metal containers.

Storage conditions

Tightly closed. Dry.

Recommended storage temperature see product label.

Specific end use(s):

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters:

Contains no substances with occupational exposure limit values.

Exposure Controls:

Appropriate Engineering Controls:

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See section 7.1.

Personal Protective Equipment:

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye & Face Protection-

Safety glasses

- **Hand Protection –**

Full contact: -

Glove material : Nitrile- Rubber

Glove thickness : 0.11 mm

Break through time: >480 min

Flash contact: -

Glove material : Nitrile- Rubber

Glove thickness : 0.11 mm

Break through time: >480 min

- The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 741 Dermatril® L (full contact), KCL 741 Dermatril® L

(splash contact). The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types. This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

- **Body Protection-**

protective clothing

- **Respiratory Protection-**

Required when dusts are generated. Recommended Filter type: Filter P 2 (acc. to DIN 3181) for solid and liquid particles of harmful substances The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

- **Environmental Exposure Controls-**

Do not let product enter drains.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties:

- **Appearance:** White (Crystalline) powder
- **Physical State:** Solid
- **Odor:** Odorless
- **Odor Threshold:** No data available
- **pH:** 1.85 at 50 g/l 25 °C
- **Melting Point:** 153 °C
- **Critical Temperature:** No data available
- **Vapor Pressure:** < 1 Pa at 25 °C (anhydrous substance)
- **Relative Vapor Density:** No data available
- **Specific Gravity / Density:** 1.54 g/cm³ at 20 °C
- **Auto-Ignition Temperature:** 345 °C
- **Decomposition Temperature:** > 170°C
- **Volatility:** No data available
- **Bulk Density:** ca.800 - 1,000 kg/m³

- **Viscosity, dynamic:** No data available
- **Viscosity, Kinematic:** No data available
- **Water/Oil Dist. Co eff.:** No data available
- **Partition Co-efficient: n-octanol/Water:** log Pow: -1.72 (20 °C) OECD Test Guideline 117
(anhydrous substance) Bioaccumulation is not expected.
- **Ionicity (in Water):** No data available
- **Lower Explosion Limit:** No data available
- **Upper Explosion Limit:** No data available
- **Boiling Point/Range:** No data available
- **Flash Point:** No data available
- **Water Solubility:** ca.880 g/l at 20 °C
- **Molecular Weight:** 210.14

Other information:

Molecular Formula: C₆ H₈ O₇ . H₂ O

SECTION 10: STABILITY AND REACTIVITY

Reactivity: -

Risk of dust explosion.

Forms explosive mixtures with air on intense heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Chemical stability:

Releases water of crystallisation when heated. The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions:

Violent reactions possible with:

Metals, Oxidizing agents, Bases, Reducing agents

Conditions to avoid: Temperatures

above melting point. Strong
heating.

Incompatible materials:

Metals

Hazardous decomposition products:

No data available

SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Acute Oral toxicity

LD50 Rat: 11,700 mg/kg

OECD Test Guideline 401

(anhydrous substance)

Symptoms: In high doses:, Irritation of mucous membranes, Pain, Bloody vomiting

Acute inhalation toxicity

Symptoms: Possible damages:, Irritation symptoms in the respiratory tract.

Acute dermal toxicity

LD50 Rat: > 2,000 mg/kg

OECD Test Guideline 402

(anhydrous substance)

Skin irritation

Rabbit

Result: No irritation

OECD Test Guideline 404

(anhydrous substance)

Eye irritation

Rabbit

Result: Severe irritations

OECD Test Guideline 405

(anhydrous substance)

Causes serious eye irritation.

Sensitisation

No data available

Germ cell mutagenicity

Genotoxicity in vivo

Chromosome aberration test

Rat

Male

Oral

Bone marrow

Result: negative

Method: OECD Test Guideline 475

(anhydrous substance)

Genotoxicity in vitro

Ames test Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

(anhydrous substance)

Carcinogenicity

No data available

Reproductive toxicity

No impairment of reproductive performance in animal experiments. (Lit.)

Teratogenicity

Did not show teratogenic effects in animal experiments. (Lit.)

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Further Information:

Substance which occurs in the human body under physiological conditions.

Other dangerous properties can not be excluded. Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity:

Toxicity to fish

LC50 *Leuciscus idus* (Golden orfe): 440 - 760 mg/l; 96 h
(anhydrous substance) (IUCLID)

Toxicity to daphnia and other aquatic invertebrates

EC5 *E.sulcatum*: 485 mg/l; 72 h
(anhydrous substance) (maximum permissible toxic concentration) (Lit.)

Toxicity to algae

IC5 *M.aeruginosa*: 80 mg/l; 8 d
(anhydrous substance) (maximum permissible toxic concentration) (Lit.)

Toxicity to bacteria

EC5 *Pseudomonas putida*: > 10,000 mg/l; 16 h
(anhydrous substance) (Lit.)

Persistence and degradability:

Biodegradability 98 %; 2 d
OECD Test Guideline 302B
(anhydrous substance)
Readily eliminated from water

Biochemical Oxygen Demand (BOD) 481 mg/g (5 d) (External MSDS)

Chemical Oxygen Demand (COD) 685 mg/g (External MSDS)

Theoretical oxygen demand (ThOD) 686 mg/g (Lit.)

Bioaccumulate potential:

Partition coefficient: n - octanol/water
log Pow: -1.72 (20 °C)
OECD Test Guideline 117
(anhydrous substance) Bioaccumulation is not expected.

Mobility in soil:

No data available

Results of PBT and vPvB assessment

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006,

Annex XIII.

Other adverse effects:

Additional ecological information

Harmful effect due to pH shift. Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste material must be disposed of in accordance with the national and local regulations.

Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

	Land transport (ADR/RID)	Air transport (IATA)	Sea transport (IMDG)
14.1 UN number	Not classified as dangerous in the meaning of transport regulations.		
14.2 Proper shipping name	Not classified as dangerous in the meaning of transport regulations.		
14.3 Class	Not classified as dangerous in the meaning of transport regulations.		
14.4 Packing group	Not classified as dangerous in the meaning of transport regulations.		
14.5 Environmentally hazardous	Not classified as dangerous in the meaning of transport regulations.		
14.6 Special precautions for user	Not classified as dangerous in the meaning of transport regulations.		

SECTION 15: Regulatory information

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

National legislation

Storage class 10 - 13

Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H319 Causes serious eye irritation.

Training advice

Provide adequate information, instruction and training for operators.

End of msds