

SAFETY DATA SHEET

2001/58/EC

Product name

Citric Acid

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Identification of the substance/preparation

Product name **Citric Acid, Citric acid anhydrous, Citric acid monohydrate**

Use of the Substance/Preparation Food, Pharmaceutical and Industrial additive
(acidifier, sequestering agent)

Company/Undertaking Identification

Supplier **JUNGBUNZLAUER Austria AG**
A-2064 Pernhofen
Austria

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2. COMPOSITION/INFORMATION ON INGREDIENTS

	Citric acid anhydrous	Citric acid monohydrate
Chemical name of the substance	C ₆ H ₈ O ₇	C ₆ H ₈ O ₇ · H ₂ O
Chemical Name	2-hydroxypropane-1,2,3-tricarboxylic acid anhydrous	monohydrate
Synonyms	Citric Acid	
EC-No.	201-069-1	201-069-1
CAS-No.	77-92-9	5949-29-1
Hazardous impurities	None.	

3. HAZARDS IDENTIFICATION

Classification	Xi - Irritant, R36
Most important hazards	Irritating to eyes. May cause skin irritation in susceptible persons.

4. FIRST AID MEASURES

General advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is not required.
Inhalation	Move to fresh air.
Skin contact	Wash off immediately with soap and plenty of water. If skin irritation persists, call a physician.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, consult a specialist.
Ingestion	Drink plenty of water. Do not induce vomiting. Consult a physician if necessary.
Protection of first-aiders	Use personal protective equipment.

SAFETY DATA SHEET

2001/58/EC

Product name

Citric Acid

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	water, water spray, dry powder, foam, carbon dioxide (CO ₂).
Extinguishing media which must not be used for safety reasons	None.
Hazardous decomposition products	carbon oxides
Special protective equipment for firefighters	Use personal protective equipment.
Specific methods	Standard procedure for chemical fires.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Use personal protective equipment. Avoid contact with skin and eyes.
Environmental precautions	Prevent further leakage or spillage if safe to do so. No special environmental precautions required.
Methods for cleaning up	Pick up and transfer to properly labelled containers. After cleaning, flush away traces with water.

7. HANDLING AND STORAGE

Handling	
Technical measures/Precautions	Avoid dust formation. Take precautionary measures against static discharges.
Safe handling advice	Use personal protective equipment.
Storage	
Technical measures/Storage conditions	Keep tightly closed in a dry and cool place.
Incompatible products	strong oxidizing agents, strong bases.
Packaging material	Polyethylene coated paperbags or polyethylene/propylene big bags.
Specific use(s)	See chapter 1

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure controls	
Exposure Limit Values	We are not aware of any national exposure limit.
Engineering measures to reduce exposure	Ensure adequate ventilation, especially in confined areas.
Exposure controls	No special precautions required.
Personal protective equipment	
Respiratory protection	effective dust mask
Hand protection	rubber gloves Break through time > 8 hours
Eye protection	safety glasses
Skin and body protection	lightweight protective clothing
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	No special environmental precautions required.

SAFETY DATA SHEET

2001/58/EC

Product name

Citric Acid**9. PHYSICAL AND CHEMICAL PROPERTIES**

General Information (appearance, odour)

Form	powder / crystalline
Colour	white / colourless
Odour	none

Important Health Safety and Environmental Information

	Citric acid anhydrous	Citric acid monohydrate
pH solution (5 %) (25°C)	1.80	1.85
Decomposition temperature	> 170°C	> 170 °C
Autoignition temperature	no data available	no data available
Explosive properties, Risk of explosion.:	Class St 1	Class St 0
Relative density	1.665 g/cm ³	1.542 g/cm ³
Bulk density granular	850 - 950 kg/m ³	850 - 950 kg/m ³
powder	550 - 650 kg/m ³	550 - 650 kg/m ³
Solubility		
Water solubility (25°C)	61.8 % (w/w)	67.6 % (w/w)
log P _{ow} (oct)	-1.72 (measured) -1.25 – -1.80 (calculated)	
Other information		
Melting point/range	153°C	135 – 152°C
Solubility in other solvents		
Ethanol (25°C)	38.3 % (w/w)	41.9 % (w/w)

10. STABILITY AND REACTIVITY

Stability	Stable at normal conditions. Hazardous polymerisation does not occur.
Conditions to avoid	Avoid dust formation. Take precautionary measures against static discharges.
Materials to avoid	Incompatible with strong bases and oxidizing agents.
Hazardous decomposition products	No decomposition if stored normally. Thermal decomposition can lead to release of irritating gases and vapours.

11. TOXICOLOGICAL INFORMATION

Acute toxicity	LD50/p.o./rat = 11.700 mg/kg ⁽¹⁾ LD50/i.p./rat = 883 mg/kg ⁽²⁾ LD50/p.o./mouse = 5.040 mg/kg ⁽¹⁾ LD50/i.v./mouse = 42 mg/kg ⁽¹⁾ LD50/i.p./mouse = 961 mg/kg ⁽²⁾
Local effects	Irritating to eyes. May cause skin irritation in susceptible persons.
Chronic toxicity	None.
Human experience	Health injuries are not known or expected under normal use.

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12. ECOLOGICAL INFORMATION

Mobility	completely soluble
Persistence / degradability	
Chemical oxygen demand (COD) =	750 ± 50 mg O ₂ /g
Biochemical oxygen demand	
within 5 days (BOD5) =	625 ± 50 mg O ₂ /g
DIN 38412 Part 25 (DIN EN ISO 9888)	Readily biodegradable (98% after 2 days) ⁽⁴⁾
Ecotoxicity	
DIN 38412 Part 15 (DIN EN ISO 7346)	Toxicity to fish 440 - 706 mg/l
DIN 38412 Part 5	Toxicity to bacteria >10.000 mg/l
Bioaccumulation	None.

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products	Where possible recycling is preferred to disposal or incineration. Can be landfilled or incinerated, when in compliance with local regulations.
Contaminated packaging	Empty containers should be taken for local recycling, recovery or waste disposal.
Further Information	According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used.

14. TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations.

15. REGULATORY INFORMATION

The product is classified and labelled in accordance with EC directives or respective national laws. ^{(5),(6)}	
Symbol(s):	X _i - Irritant
R -phrase(s):	R36 - Irritating to eyes.
S -phrase(s)	S26 - In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

16. OTHER INFORMATION

Food Additive E 330 USA FDA GRAS Status

Sources of key data used to compile the datasheet

- (1) H.T. Yokotani et al, J. Takeda Res. Lab 30 (1) 25 (1971)
- (2) C.M. Gruber & W.A. Halbeisen, J. Pharmac. Exp. Ther. 94 65 (1948)
- (3) FDA 223-75-2004 (1977)
- (4) P. Creach: C. R. Acad. Sci. Paris 240 2551 (1955)
- (5) ECAMA Internal Report 1998, Citric acid has irritancy equivalent to fumaric acid see Annex 1 Directive 67/548/EEC.
- (6) Directive 67/548/EEC Annex 7, non toxic to the environment.

Indicates updated section.

The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release 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 or in any process, unless specified in the text.