

**Material Safety Data Sheet**  
According to 91/155 EC

Printing date 22.05.2001

Reviewed on 22.05.2001

**1 Identification of substance**

- Product details
- Trade name citric acid
- Article number: 110671
- Manufacturer/Supplier:  
Stockmeier Chemie GmbH & Co.KG  
Eckendorfer Str. 10  
D-33609 Bielefeld
- Informing department: Product safety department.
- Emergency information:  
During office hours: environment protection department  
at other times: factory fire brigade

Phone: +49(0)521/3037-0

**2 Composition/Data on components:**

- Chemical characterization: Zitronensäure  $\text{HOC}(\text{COOH})(\text{CH}_2\text{COOH})_2$
- CAS No. Designation:  
77-92-9 citric acid
- Identification no(s):
- EINECS no.: 201-069-1

**3 Hazards identification**

- Hazard designation:



Xi Irritant

- Information pertaining to particular dangers for man and environment R 36 Irritating to eyes.
- Classification system  
The classification is in line with current EC lists. It is expanded, however, by information from technical literature and by information furnished by supplier companies.

**4 First aid measures**

- General advice: In case of unconsciousness bring patient into stable side position for transport.
- After inhalation Supply fresh air; consult doctor in case of symptoms.
- After skin contact  
Remove contaminated clothing immediately. Wash affected areas with plenty of water und soap. If irritation continues, contact a doctor.
- After eye contact  
Rinse immediately opened eye for several minutes under running water. Then consult doctor.
- After swallowing  
Rinse out mouth and then drink plenty of water.  
In case of persistent symptoms consult doctor.

**5 Fire fighting measures**

- Suitable extinguishing agents  
Use fire fighting measures that suit the environment.  
CO<sub>2</sub>, extinguishing powder or water jet. Fight larger fires with water jet or alcohol-resistant foam.

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- **Special hazards caused by the material, its products of combustion or flue gases:**  
As all organic solids, the dust of citric acid can form with air an explosive mixture. Dustexplosionclass ST 1 (low).
- **Protective equipment:** A dust protectiv chlothing to surrounding burning

### 6 In case of accidental release

- **Person-related safety precautions:** Wear protective equipment. Keep off unprotected persons
- **Measures for environmental protection:** If large amounts are released, the authorities must be informed.
- **Measures for cleaning/collecting:**  
Mechanically move and rinse the remainder with water. Avoid dust development. Place in suitable container and send to be recycled or disposed (taking item 13 into account)

### 7 Handling and storage

- **Handling**
- **Information for safe handling:** Prevent formation of dust.
- **Information about protection against explosions and fires:**  
Dust can combine with air to form an explosive mixture.  
Dustexplosionclass ST 1 (low)
- **Storage** Keep containers tightly closed. Store in cool, dry conditions.
- **Requirements to be met by storerooms and containers:** Keep container tightly closed and dry
- **Information about storage in one common storage facility:**  
Do not store together with alkalis (caustic solutions).  
Store away from oxidizing agents.

### 8 Exposure controls and personal protection

- **Additional information about design of technical systems:** In case of dust development, suction is needed.
- **Components with critical values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the compilation were used as basis.
- **Personal protective equipment**
- **General protective and hygienic measures**  
The usual precautionary measures should be adhered to in handling the chemicals.  
Do not inhale dust. Prevent formation of dust.  
Avoid contact with the eyes.
- **Breathing equipment:** In case of dizzling-dust breathing protection is required
- **Protection of hands:** Rubber gloves
- **Eye protection:** Safety glasses
- **Body protection:** Protective work clothing.

### 9 Physical and chemical properties:

- <b>Form:</b>	Crystalline powder
- <b>Colour:</b>	White
- <b>Smell:</b>	Odourless
- <b>Change in condition</b> Melting point/Melting range:	153°C
- <b>Flash point:</b>	345°C
- <b>Ignition temperature:</b>	1010°C

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- Decomposition temperature:	ab 153°C
- Self-inflammability:	off 345°C.
- Danger of explosion:	Product is not explosive. However, formation of air/dust mixtures is possible.
- Density at 20°C	1.665 g/cm <sup>3</sup>
- Settled apparent density at 20°C	1000 kg/m <sup>3</sup>
- Solubility in / Miscibility with Water at 20°C:	720 g/l
- pH-value (10 g/l) at 20°C:	2.0
- molecular weight (weight average/Mw):	192.13 g/mol

## 10 Stability and reactivity

- Thermal decomposition / conditions to be avoided: No decomposition up to 140°C.
- Materials to be avoided:
  - strong bases
  - strong oxidising agents
- Dangerous reactions Reacts with zinc, copper, aluminium and alloys of these metals.
- Dangerous products of composition:
  - Formation of carbon monoxid, carbon dioxide and other irritating gases in the case of fire.

## 11 Toxicological information

- Acute toxicity:
- LD/LC50 values that are relevant for classification:
 

Oral	LD50	6730 mg/kg (rat)
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- Primary irritant effect:
  - on the skin: Irritant for skin and mucous membranes.
  - on the eye: Irritant effect.
- Sensitization: No sensitizing effect known.

## 12 Ecological information:

- Information about elimination (persistence and degradability): The product is easy biodegradable
- Ecotoxicological effects: No ecological data are known
- Aquatic toxicity:
  - Type of test Effective concentration Method Assessment
  - Gold fish 440-706 mg/l/96h LC50
  - Bacteria > 10000 mg/l IC50
- Remark: Easy biodegradable. OECD 302 B: 98% in 2 days
- Other information:
  - CSB: : 728 mg/O<sub>2</sub>/g
  - BSB5 : 526 mg/O<sub>2</sub>/g
- General notes: Water hazard class I (Assessment by list): slightly hazardous for water.

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**13 Disposal considerations****- Product:**

The following advice is related to new material and not to any processed products. In case of a mixture with other products other disposal methods may become necessary. If in doubt seek advice from product supplier or from local authorities.

**- Recommendation**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

**- Waste disposal key number:**

Since 01/01/99 the waste code numbers have not only been product-related but are also essentially application-related. The valid waste code number of the application can be obtained from the European waste catalogue.

**- Uncleaned packagings:****- Recommendation:**

Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.

- Recommended cleaning agent: Water, if necessary with cleaning agent.

**14 Transport regulations:**

- Land transport ADR/RID and GGVS/GGVE (cross-border/domestic)

Not classified as hazardous substance according to ADR/RID.

**15 Regulations:****- Designation according to EC guidelines:**

Observe the normal safety regulations when handling chemicals  
The product has been classified and labelled in accordance with EC Directives.

- Code letter and hazard designation of product: Xi Irritant

- Risk phrases: 36 Irritating to eyes.

- Safety phrases: 24/25 Avoid contact with skin and eyes.

- National regulations

- Classification according to VbF: Void

- Water hazard class:

Water hazard class: 1 (Assessment by list) slightly hazardous for water

**16 Other information:**

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- Department issuing data specification sheet: Environment protection department.

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