

# Safety data sheet

acc. to OSHA, Appendix D to § 1910.1200



**Citric acid ≥ 99,5%, extra pure, anhydrous**

article number: **7624**  
Version: **1.0 en**

date of compilation: 2018-07-23

## SECTION 1: Identification

### 1.1 Product identifier

Identification of the substance	<b>Citric acid</b>
Article number	7624
Registration number (REACH)	01-2119457026-42-xxxx
EC number	201-069-1
CAS number	77-92-9

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

<b>Identified uses:</b>	laboratory chemical laboratory and analytical use
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### 1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG  
Schoemperlenstr. 3-5  
D-76185 Karlsruhe  
Germany

**Telephone:** +49 (0) 721 - 56 06 0

**Telefax:** +49 (0) 721 - 56 06 149

**e-mail:** [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

**Website:** [www.carlroth.de](http://www.carlroth.de)

Competent person responsible for the safety data sheet : Department Health, Safety and Environment

**e-mail (competent person)** : [sicherheit@carlroth.de](mailto:sicherheit@carlroth.de)

### 1.4 Emergency telephone number

Emergency information service **Poison Centre Munich: +49/(0)89 19240**

## SECTION 2: Hazard(s) identification

### 2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
A.3	serious eye damage/eye irritation	(Eye Irrit. 2)	H319

### Supplemental hazard information

Code	Supplemental hazard information
HNOC001	may be harmful if swallowed (GHS category 5: acutely toxic - oral)

### 2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

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## Signal word

**Warning**

## Pictograms



## Hazard statements

H319 Causes serious eye irritation

## Precautionary statements

### **Precautionary statements - prevention**

Wash ... thoroughly after handling.  
Wear eye protection/face protection.

### **Precautionary statements - response**

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
If eye irritation persists: Get medical advice/attention.

### **Labelling of packages where the contents do not exceed 125 ml**

Signal word: **Warning**

Symbol(s)



HNO001 May be harmful if swallowed (GHS category 5: acutely toxic - oral).

## **2.3 Other hazards**

There is no additional information.

## **SECTION 3: Composition/information on ingredients**

### **3.1 Substances**

Name of substance	Citric acid
Registration number (REACH)	01-2119457026-42-xxxx
EC number	201-069-1
CAS number	77-92-9
Molecular formula	C <sub>6</sub> H <sub>8</sub> O <sub>7</sub>
Molar mass	192.1 g/mol

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## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures



#### General notes

Take off contaminated clothing.

#### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following skin contact

Rinse skin with water/shower.

#### Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

#### Following ingestion

Rinse mouth. Call a doctor if you feel unwell.

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

Irritation, Gastrointestinal complaints, Vomiting

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

none

## SECTION 5: Fire-fighting measures

### 5.1 Extinguishing media



#### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings  
water spray, foam, dry extinguishing powder, carbon dioxide (CO<sub>2</sub>)

#### Unsuitable extinguishing media

water jet

### 5.2 Special hazards arising from the substance or mixture

Combustible.

#### Hazardous combustion products

In case of fire may be liberated: carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>)

### 5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

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## SECTION 6: Accidental release measures

### 6.1 Personal precautions, protective equipment and emergency procedures

#### For non-emergency personnel

Do not breathe dust. Avoid contact with skin and eyes.

### 6.2 Environmental precautions

Keep away from drains, surface and ground water.

### 6.3 Methods and material for containment and cleaning up

#### Advices on how to contain a spill

Covering of drains.

#### Advices on how to clean up a spill

Take up mechanically. Control of dust.

#### Other information relating to spills and releases

Place in appropriate containers for disposal.

### 6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

No special measures are necessary.

#### Advice on general occupational hygiene

Wash hands before breaks and after work.

### 7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a dry place.

#### Incompatible substances or mixtures

Observe compatible storage of chemicals.

#### Consideration of other advice

##### • Ventilation requirements

Use local and general ventilation.

##### • Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C.

### 7.3 Specific end use(s)

No information available.

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### National limit values

#### Occupational exposure limit values (Workplace Exposure Limits)

Data are not available.

#### Relevant DNELs/DMELs/PNECs and other threshold levels

##### • environment values

Endpoint	Threshold level	Environmental compartment
PNEC	0.44 mg/l	freshwater
PNEC	0.044 mg/l	marine water
PNEC	1,000 mg/l	sewage treatment plant (STP)
PNEC	34.6 mg/kg	freshwater sediment
PNEC	3.46 mg/kg	marine sediment
PNEC	33.1 mg/kg	soil

### 8.2 Exposure controls

#### Individual protection measures (personal protective equipment)

##### Eye/face protection



Use safety goggle with side protection.

##### Skin protection



##### • hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

##### • type of material

NBR (Nitrile rubber)

##### • material thickness

>0,11 mm

##### • breakthrough times of the glove material

>480 minutes (permeation: level 6)

##### • other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

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## Respiratory protection



Respiratory protection necessary at: Dust formation. Particulate filter device (EN 143). P1 (filters at least 80 % of airborne particles, color code: White).

## Environmental exposure controls

Keep away from drains, surface and ground water.

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### Appearance

Physical state	solid (crystalline)
Color	whitish
Odor	odorless
Odor threshold	No data available

#### Other physical and chemical parameters

pH (value)	1.6 – 1.8 (water: 100 g/l, 20 °C)
Melting point/freezing point	153 – 155 °C
Initial boiling point and boiling range	This information is not available.
Flash point	not applicable
Evaporation rate	no data available
Flammability (solid, gas)	These information are not available
<u>Explosive limits</u>	
• lower explosion limit (LEL)	this information is not available
• upper explosion limit (UEL)	this information is not available
Explosion limits of dust clouds	these information are not available
Vapor pressure	<0.1 hPa at 20 °C
Density	1.67 g/cm <sup>3</sup> at 20 °C
Vapor density	This information is not available.
Bulk density	500 – 600 kg/m <sup>3</sup>
Relative density	Information on this property is not available.
<u>Solubility(ies)</u>	
Water solubility	~ 1,300 g/l at 20 °C
<u>Partition coefficient</u>	
n-octanol/water (log KOW)	-1.64 (TOXNET)
Auto-ignition temperature	Information on this property is not available.
Decomposition temperature	>155 °C

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Viscosity	not relevant (solid matter)
Explosive properties	Shall not be classified as explosive
Oxidizing properties	none

### 9.2 Other information

There is no additional information.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Dust explosibility.

### 10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

### 10.3 Possibility of hazardous reactions

Violent reaction with: Oxidizers, Metals, Bases, Reducing agents

### 10.4 Conditions to avoid

Keep away from heat. Decomposition takes place from temperatures above:  $>155\text{ }^{\circ}\text{C}$ .

### 10.5 Incompatible materials

different metals

### 10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

Shall not be classified as acutely toxic.

Exposure route	Endpoint	Value	Species	Source
oral	LD50	$>3,000\text{ mg/kg}$	rat	TOXNET

#### Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

#### Serious eye damage/eye irritation

Causes serious eye irritation.

#### Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

#### Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

- **Specific target organ toxicity - single exposure**

Shall not be classified as a specific target organ toxicant (single exposure).

- **Specific target organ toxicity - repeated exposure**

Shall not be classified as a specific target organ toxicant (repeated exposure).

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### Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

### Symptoms related to the physical, chemical and toxicological characteristics

#### • If swallowed

gastrointestinal complaints, vomiting

#### • If in eyes

strongly irritant

#### • If inhaled

irritant effects

#### • If on skin

slightly irritant

### Other information

None

## SECTION 12: Ecological information

### 12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

#### Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
LC50	440 mg/l	orfe (Leuciscus idus)	IUCLID	96 h
EC50	120 mg/l	daphnia magna	IUCLID	72 h

#### Aquatic toxicity (chronic)

Endpoint	Value	Species	Source	Exposure time
LC50	1,535 mg/l	aquatic invertebrates	ECHA	24 h

### 12.2 Process of degradability

The substance is readily biodegradable.

Theoretical Oxygen Demand: 750 mg/g

Theoretical Carbon Dioxide: 1.374 mg/mg

Biochemical Oxygen Demand: 526 mg/g at 5 h

Process	Degradation rate	Time
biotic/abiotic	98 %	2 d

### 12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)

-1.64

### 12.4 Mobility in soil

Data are not available.



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## 12.5 Results of PBT and vPvB assessment

Data are not available.

## 12.6 Other adverse effects

Data are not available.

## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods



This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

#### Sewage disposal-relevant information

Do not empty into drains.

#### Sewage disposal-relevant information

Do not empty into drains.

### 13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

## SECTION 14: Transport information

- |      |   |  |
|------|---|--|
| 14.1 | UN number   | (not subject to transport regulations)                                       |
| 14.2 | UN proper shipping name   | not relevant   |
| 14.3 | Transport hazard class(es)  | not relevant   |
|      | Class   | -  |
| 14.4 | Packing group   | not relevant   |
| 14.5 | Environmental hazards   | none (non-environmentally hazardous acc. to the dangerous goods regulations) |
| 14.6 | <b>Special precautions for user</b>                                       |  |
|      |   | There is no additional information.  |
| 14.7 | <b>Transport in bulk according to Annex II of MARPOL and the IBC Code</b> |  |
|      |   | The cargo is not intended to be carried in bulk.                             |
| 14.8 | <b>Information for each of the UN Model Regulations</b>                   |  |
|      | • <b>Transport of dangerous goods by road or rail (49 CFR US DOT)</b>     |  |
|      |   | Not subject to transport regulations.  |
|      | • <b>International Maritime Dangerous Goods Code (IMDG)</b>               |  |
|      |   | Not subject to IMDG.   |

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- **International Civil Aviation Organization (ICAO-IATA/DGR)**

Not subject to ICAO-IATA.

## SECTION 15: Regulatory information

### 15.1 Safety, health and environmental regulations specific for the product in question

#### National regulations (United States)

##### **Toxic Substance Control Act (TSCA)**

Not listed.

##### **Superfund Amendment and Reauthorization Act (SARA TITLE III)**

The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)

Not listed.

Specific Toxic Chemical Listings (EPCRA Section 313)

Not listed.

##### **CERCLA**

##### **List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)**

Not listed.

##### **Clean Air Act**

Not listed.

##### **New Jersey Worker and Community Right to Know Act**

Not listed.

##### **California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987**

Not listed.

##### **Drug precursors**

Not listed.

##### **Industry or sector specific available guidance(s)**

##### **NPCA-HMIS® III**

Hazardous Materials Identification System (HMIS). American Coatings Association.

Category	Rating	Description
Chronic	/	none
Health	2	temporary or minor injury may occur
Flammability	1	material that must be preheated before ignition can occur
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

Chronic:

Flammability:

Health:

Personal protection:

Physical hazard:

Chronic hazard

Flammability hazard

Health hazard

Personal protective equipment (PPE) for normal use

Reactivity

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### NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	1	material that must be preheated before ignition can occur
Health	0	material that, under emergency conditions, would offer no hazard beyond that of ordinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

Flammability:

Health:

Instability:

Flammability hazard

Health hazard

Instability hazard

### National inventories

Substance is listed in the following national inventories:

Country	National inventories	Status
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

#### Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

## 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

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## SECTION 16: Other information, including date of preparation or last revision

### Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
49 CFR US DOT	49 CFR § 40 U.S. Department of Transportation
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NFPA® 704	National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States)
NLP	No-Longer Polymer
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
vPvB	very Persistent and very Bioaccumulative

### Key literature references and sources for data

- OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200
- Transport of dangerous goods by road or rail (49 CFR US DOT)
- 49 CFR § 172.101 Hazardous Materials Table (DOT)
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

### List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H319	causes serious eye irritation

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## Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.