

SAFETY DATA SHEET

Version 6.4
Revision Date 27.10.2023
Print Date 28.04.2024

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : Citric acid monohydrate

Product Number : C1909
Brand : Sigma-Aldrich
CAS-No. : 5949-29-1

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

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : MilliporeSigma Canada Ltd.
2149 WINSTON PARK DRIVE
OAKVILLE ON L6H 6J8
CANADA

Telephone : +1 905 829-9500
Fax : +1 905 829-9292

1.4 Emergency telephone

Emergency Phone # : +1-703-527-3887 CHEMTREC
(International)
24 Hours/day; 7 Days/week

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture**

**GHS Classification in accordance with Hazardous Products Regulations (HPR)
(SOR/2015-17)**

Eye irritation (Category 2A), H319

Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

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

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Warning

Sigma-Aldrich - C1909

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Hazard statement(s)	
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
Precautionary statement(s)	
P261	Avoid breathing dust.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear eye protection/ face protection.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

- none

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula	: $C_6H_8O_7 \cdot H_2O$
Molecular weight	: 210.14 g/mol
CAS-No.	: 5949-29-1
EC-No.	: 201-069-1

Component	Classification	Concentration *
Citric acid monohydrate		
	Eye Irrit. 2A; STOT SE 3; H319, H335	<= 100 %
* Weight %		

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

SECTION 4: First aid measures

4.1 Description of first-aid measures

No data available

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

No data available

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Combustible.

5.3 Advice for firefighters

No data available

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For personal protection see section 8.

6.2 Environmental precautions

No data available

6.3 Methods and materials for containment and cleaning up

No data available

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

No data available

7.3 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

8.1 Control parameters

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Personal protective equipment

Skin protection

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 EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

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Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: KCL 741 Dermatril® L

Control of environmental exposure

Prevent product from entering drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a) Appearance	Form: crystalline Color: white
b) Odor	odorless
c) Odor Threshold	Not applicable
d) pH	1.85 at 50 g/l at 25 °C (77 °F) 1.8 at 50 g/l at 20 °C (68 °F)
e) Melting point/freezing point	Melting point/range: 135 - 152 °C (275 - 306 °F)
f) Initial boiling point and boiling range	(decomposition)
g) Flash point	173.9 °C (345.0 °F) - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower	No data available

flammability or
explosive limits

- | | | |
|----|---|--|
| k) | Vapor pressure | < 0.01 hPa at 25 °C (77 °F) - (anhydrous substance) |
| l) | Vapor density | 7.26 - (Air = 1.0) |
| m) | Density | 1.54 g/cm ³ at 20 °C (68 °F) |
| | Relative density | No data available |
| n) | Water solubility | ca.880 g/l at 20 °C (68 °F) |
| o) | Partition coefficient:
n-octanol/water | log Pow: -1.72 at 20 °C (68 °F) - (anhydrous substance),
Bioaccumulation is not expected. |
| p) | Autoignition
temperature | No data available |
| q) | Decomposition
temperature | > 170 °C (> 338 °F) - |
| r) | Viscosity | No data available |
| s) | Explosive properties | No data available |
| t) | Oxidizing properties | none |

9.2 Other safety information

Relative vapor density	7.26 - (Air = 1.0)
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SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

No data available

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Metals
Oxidizing agents
Bases
Reducing agents

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Mouse - male and female - 5,400 mg/kg
(OECD Test Guideline 401)

Remarks: The value is given in analogy to the following substances: citric acid

Inhalation: No data available

LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)

Remarks: The value is given in analogy to the following substances: citric acid

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Remarks: The value is given in analogy to the following substances: citric acid

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Irritating to eyes.
(OECD Test Guideline 405)

Remarks: The value is given in analogy to the following substances: citric acid

Remarks: (ECHA)

Respiratory or skin sensitization

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Remarks: The value is given in analogy to the following substances: citric acidTest Type:

Mutagenicity (mammal cell test): micronucleus.

Test system: Human lymphocytes

Metabolic activation: without metabolic activation

Method: OECD Test Guideline 487

Result: positive

Remarks: The value is given in analogy to the following substances: citric acid

Test Type: Chromosome aberration test

Species: Rat

Cell type: Bone marrow

Application Route: Oral

Method: OECD Test Guideline 475

Result: negative

Remarks: The value is given in analogy to the following substances: citric acid

Test Type: dominant lethal test

Species: Rat

Application Route: Oral
Method: Regulation (EC) No. 440/2008, Annex, B.22
Result: negative
Remarks: The value is given in analogy to the following substances: citric acid

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation.

Remarks: The value is given in analogy to the following substances: citric acid

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

RTECS: GE7810000

Vomiting, Diarrhea, Damage to tooth enamel., Dermatitis

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	LC50 - Leuciscus idus (Golden orfe) - 440 - 760 mg/l - 96 h Remarks: (IUCLID) The value is given in analogy to the following substances: citric acid
Toxicity to algae	IC5 - Scenedesmus quadricauda (Green algae) - 640 mg/l - 7 d Remarks: (maximum permissible toxic concentration) (Lit.) The value is given in analogy to the following substances: citric acid (Citric acid monohydrate)
Toxicity to bacteria	Remarks: (maximum permissible toxic concentration) (Lit.) The value is given in analogy to the following substances: citric acid (Citric acid monohydrate)

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d Result: 97 % - Readily biodegradable. (OECD Test Guideline 301B) Remarks: The value is given in analogy to the following substances: citric acid
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Biochemical Oxygen Demand (BOD)	526 mg/g
	Remarks: (IUCLID)
Chemical Oxygen Demand (COD)	728 mg/g
	Remarks: (IUCLID)

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

SECTION 13: Disposal considerations

13.1 Waste treatment methods

No data available

SECTION 14: Transport information

TDG

Not regulated as a dangerous good

IMDG

Not dangerous goods

IATA

Not dangerous goods

Further information

Not classified as dangerous in the meaning of transport regulations.

SECTION 15: Regulatory information

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR.

SECTION 16: Other information

The branding on the header and/or footer of this document may temporarily not visually match the product purchased as we transition our branding. However, all of the information in the document regarding the product remains unchanged and matches the product ordered. For further information please contact misbranding@sial.com.

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