SAFETY DATA SHEET

Citric acid monohydrate

Product	Citric acid monohydrate
Version	V 2.1-CH
Date of issue	03.11.2026
English version	translated from the German version V 2.1-CH
Supersedes	V 2.0-CH of 16.09.2026
Prepared by	EDAPRO GmbH, Ruswil

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name: Citric acid monohydrate

Chemical name: 2-hydroxypropane-1,2,3-tricarboxylic acid monohydrate (E 330)

CAS No.: 5949-29-1 · **EC No.:** 201-069-1 · **REACH registration No.:** 01-2119457026-42

Molecular formula: $C_6H_8O_7 \cdot H_2O$ · **Molar mass:** 210.14 g/mol · **Purity:** ≥ 99.5%

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

Use: Auxiliary for crop production: acidification of spray mixes, cleaning and descaling of irrigation systems, chelating agent. Basic chemical, food additive (E 330).

Uses advised against: none known.

1.3 Details of the supplier of the safety data sheet

Placed on the Swiss market by:

EDAPRO GmbH, Halterhus 1, 6017 Ruswil, Switzerland

Tel. +41 44 508 59 86 · info@edapro.ch · www.edapro.ch

Contact for information: info@edapro.ch

Manufacturer / upstream supplier:

IMPAG AG, Räffelstrasse 12, 8045 Zurich, Switzerland

Tel. +41 43 499 25 00 · info@impag.ch

1.4 Emergency telephone number

Tox Info Suisse: tel. 145 (24 h, within Switzerland) · from abroad +41 44 251 51 51

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture (CLP, Regulation (EC) No 1272/2008)

- Eye Irrit. 2 — H319: Causes serious eye irritation.
- STOT SE 3 — H335: May cause respiratory irritation. (Self-classification due to dust formation when handling the powder.)

2.2 Label elements

Hazard pictogram: GHS07 (exclamation mark)

Signal word: Warning

Hazard statements:

- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.

Precautionary statements:

- P264 Wash hands thoroughly after handling.
- P280 Wear eye protection.
- 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.
- P261 Avoid breathing dust.
- P271 Use only outdoors or in a well-ventilated area.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.

2.3 Other hazards

The substance does not meet the PBT/vPvB criteria. No endocrine disrupting properties are known. Dust can form an explosive mixture with air — avoid raising dust and avoid sources of ignition.

SECTION 3: Composition/information on ingredients

3.1 Substances

Mono-constituent substance. Citric acid monohydrate, CAS 5949-29-1, EC 201-069-1, content ≥ 99.5%.

No impurities or additives requiring declaration.

3.2 Mixtures

Not applicable — the substance is not a mixture.

SECTION 4: First aid measures

4.1 Description of first aid measures

General: Remove contaminated clothing immediately.

After inhalation: Supply fresh air. Consult a doctor if symptoms occur.

After skin contact: Wash off immediately with soap and water and rinse thoroughly.

After eye contact: Rinse the eyes under running water for several minutes with the eyelids held open. Remove contact lenses if possible. Consult a doctor if symptoms persist.

After swallowing: Rinse mouth and drink plenty of water. Do not induce vomiting. Get medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

Eye contact causes redness, watering and irritation. Dust can cause irritation of the respiratory tract.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. No specific antidote known. If in doubt, Tox Info Suisse, tel. 145.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable: Adapt extinguishing measures to the surroundings — water, foam, CO_2, extinguishing powder. **Unsuitable extinguishing media:** none known.

5.2 Special hazards arising from the substance or mixture

The substance itself is not flammable. In the event of fire, carbon monoxide and carbon dioxide may be formed. Raised dust is potentially explosive in combination with air.

5.3 Advice for firefighters

Wear self-contained breathing apparatus. Do not allow extinguishing water to enter the sewer system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Wear eye protection. Ensure adequate ventilation.

6.2 Environmental precautions

Do not allow to enter the sewer system or surface water. If the product enters bodies of water or the sewer system, notify the competent cantonal office.

6.3 Methods and material for containment and cleaning up

Take up mechanically (sweep or vacuum, avoiding dust) and pass on for disposal in closable containers. Rinse away residues with plenty of water.

6.4 Reference to other sections

See sections 7, 8 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handle containers with care and keep them tightly closed. Avoid dust formation; use extraction for dusty work. Observe the usual hygiene measures for handling chemicals — do not eat, drink or smoke while working.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, cool place in the original packaging; protect from moisture (the product absorbs water and cakes). Storage rooms with acid-resistant floors. Store separately from bases and oxidising agents.

Swiss requirements: Storage must be arranged so that the substance is not accessible to unauthorised persons or children (Art. 8 ChemA, duty of care).

7.3 Specific end use(s)

Auxiliary for crop production — see product label and section 1.2.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

For citric acid monohydrate, the Suva list of occupational exposure limits “Grenzwerte am Arbeitsplatz” (publication 1903.d, edition of 02.04.2026) contains no substance-specific MAK value. The general limit value for granular biopersistent dusts applies:

- Inhalable fraction: MAK value 10 mg/m³
- Respirable fraction: MAK value 3 mg/m³

These values apply provided that the dust does not contain admixtures of particularly harmful substances (e.g. asbestos, quartz) and is not present in nanoscale or ultrafine form.

8.2 Exposure controls

Eye protection: Tight-fitting safety goggles (EN 166).

Hand protection: Chemical-resistant protective gloves (EN ISO 374), e.g. nitrile rubber. Observe the breakthrough time stated by the glove manufacturer.

Respiratory protection: Not required under normal handling. Use a P2 particle filter if dust is formed.

Body protection: Acid-resistant protective work clothing.

Technical measures take precedence over personal protective equipment: extraction at the source, closed systems where possible.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Value
Appearance	White crystalline powder
Odour	Odourless
pH	1.85 (aqueous solution)
Melting point	135–152 °C
Decomposition temperature	175 °C
Ignition temperature	345 °C
Flash point	Not applicable — the substance is not flammable
Vapour pressure (20 °C)	0.1 hPa
Density (20 °C)	1.54 g/cm³
Bulk density	800–1000 kg/m³
Solubility in water	Soluble
Explosion hazard	The product does not present an explosion hazard; dust/air mixtures are, however, potentially explosive

9.2 Other information

No further relevant information.

SECTION 10: Stability and reactivity

10.1 Reactivity: No hazardous reactions known when used as intended.

10.2 Chemical stability: Stable under the recommended storage conditions.

10.3 Possibility of hazardous reactions: Reacts with bases, generating heat. Attacks base metals.

10.4 Conditions to avoid: Moisture, temperatures above 175 °C, raising dust.

10.5 Incompatible materials: Strong bases, strong oxidising agents, base metals.

10.6 Hazardous decomposition products: When heated, carbon monoxide and carbon dioxide.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity: Classification criteria not met. LD50 oral (rat): 11,700 mg/kg.

Skin corrosion/irritation: Not irritating.

Serious eye damage/eye irritation: Causes serious eye irritation (Eye Irrit. 2, H319).

Sensitisation: No sensitising effect known.

Specific target organ toxicity (single exposure): Dust may cause respiratory irritation (STOT SE 3, H335).

CMR effects (germ cell mutagenicity, carcinogenicity, reproductive toxicity): Classification criteria not met.

Aspiration hazard: Classification criteria not met.

SECTION 12: Ecological information

12.1 Toxicity: LC50 (96 h, fish): > 440–760 mg/l.

12.2 Persistence and degradability: Readily biodegradable.

12.3 Bioaccumulative potential: Not expected.

12.4 Mobility in soil: Readily soluble in water and therefore mobile; rapidly degraded in soil.

12.5 Results of PBT and vPvB assessment: Does not meet the criteria.

12.6 Endocrine disrupting properties: None known.

12.7 Other adverse effects: Water hazard class WGK 1 (slightly hazardous to water, German classification). Larger quantities can lower the pH of bodies of water.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal in accordance with the Environmental Protection Act (EPA, SR 814.01) and the Ordinance on Movements of Waste (OMW, SR 814.610) as well as cantonal regulations. Do not dispose of with household waste and do not allow to enter the sewer system.

Recommended waste code according to the DETEC Ordinance on Lists for the Movements of Waste (SR 814.610.1): 20 01 14 S — “acids” (EU waste code: 20 01 14*). If the waste arises from an industrial process, 06 01 06 S “other acids” must be used instead.

The code S means special waste: hand over only to a disposal company licensed for this purpose, with a consignment note.

The final assignment of the waste code depends on the origin of the waste and the process that generated it and is made by the waste holder in consultation with the disposal company.

After consultation with the competent cantonal office, smaller quantities can be neutralised and sent to wastewater treatment. Dispose of larger quantities via a licensed disposal company.

Packaging: Completely emptied, uncontaminated packaging can be cleaned with water and recycled (15 01 01 paper and cardboard, 15 01 02 plastic). Packaging containing residues of hazardous substances: 15 01 10 S.

SECTION 14: Transport information

14.1 UN number or ID number: not applicable

14.2 UN proper shipping name: not applicable

14.3 Transport hazard class(es): not applicable

14.4 Packing group: not applicable

14.5 Environmental hazards: no

14.6 Special precautions for user: none

14.7 Maritime transport in bulk according to IMO instruments: not applicable

Not dangerous goods within the meaning of SDR/ADR, RID, IMDG and IATA.

SECTION 15: Regulatory information

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

Switzerland: Chemicals Act (ChemA, SR 813.1); Chemicals Ordinance (ChemO, SR 813.11); Chemical Risk Reduction Ordinance (ORRChem, SR 814.81); Waters Protection Ordinance (WPO, SR 814.201).

Group according to Annex 5 ChemO: The product is not subject to any supply restriction (neither group 1 nor group 2).

Obligation to report, product register (RPC): The product must be reported at www.rpc.admin.ch within three months of first being placed on the market. This does not apply if the product is obtained unchanged from a Swiss supplier and passed on unchanged, or if less than 100 kg per year is supplied exclusively to professional users.

Chemicals contact person: Anyone who prepares a safety data sheet must notify the cantonal authority of a chemicals contact person without being asked (chemsuisse form F01).

VOC incentive tax (OVOC): Not applicable — the substance is not a VOC.

EU: Regulation (EC) No 1272/2008 (CLP); Regulation (EC) No 1907/2006 (REACH). The substance is not included in the candidate list of substances of very high concern.

15.2 Chemical safety assessment

No chemical safety assessment has been carried out for this substance by the party placing it on the market.

SECTION 16: Other information

Full text of the H statements referred to

- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.

Abbreviations

Eye Irrit. 2 = eye irritation, category 2 · STOT SE 3 = specific target organ toxicity — single exposure, category 3 · LC50 / LD50 = median lethal concentration / dose · MAK = maximum workplace concentration · PBT = persistent, bioaccumulative and toxic · vPvB = very persistent and very bioaccumulative · WGK = water hazard class under German law

Data sources

Sections 2 to 14 are based on the safety data sheet “Zitronensäure Monohydrat”, item no. 627, version 53.0.2 of 19.05.2021, from Thommen-Furler AG, CH-3295 Rüti b. Büren. The information has been applied to the material supplied by IMPAG AG and supplemented by the Swiss adaptations in sections 1, 7, 8, 13 and 15.

Changes from version V 2.0-CH

Section 7.2: the reference to the duty of care is Art. 8 ChemA (the German version V 2.0-CH cited Art. 8 ChemO by mistake). No other changes to the content.

English version

Translation of the German version V 2.1-CH of 03.11.2026.

Note

The information is based on the current state of our knowledge and describes the product with regard to safety requirements. It does not constitute a guarantee of properties. Responsibility for proper use lies with the user.