

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Jungbunzlauer

Trisodium Citrate Dihydrate

Version 1.0

Revision Date 01.12.2010

Print Date 02.12.2010

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Trisodium Citrate Dihydrate
Substance name : Trisodium Citrate Dihydrate
Molecular formula : C₆H₅O₇Na₃ · 2H₂O
Chemical identity : Trisodium 3-hydroxy-3-carboxylate-1,5-pentanedicarboxylate
CAS-No. : 6132-04-3
EC-No. : 200-675-3
REACH No. : 01-2119457027-40

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

Use of the Sub-
stance/Mixture : Food/ feedstuff additives, Cosmetic additive, Medical aids,
Industrial use

1.3 Details of the supplier of the safety data sheet

Company : Jungbunzlauer Austria AG
Werk Pernhofen
2064 Wulzeshofen
Austria
www.jungbunzlauer.com

Telephone : +43 2527 200-0
Telefax : +43 2527 200-80
E-mail address : msds@jungbunzlauer.com

1.4 Emergency telephone number

Telephone : +43 2527 200-0

2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008.

Classification (67/548/EEC, 1999/45/EC)

Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

The product does not need to be labelled in accordance with EC directives or respective national laws.

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2.3 Other hazards

Additional advice:

According to our experience and to the information provided to us, the product does not have any harmful effects if it is used and handled as specified.

3. Composition/information on ingredients**3.1 Substances**

Chemical nature : Solid

Substance name	CAS-No.	Concentration [%]
No dangerous ingredients according to Regulation (EC) No. 1907/2006 :		
Trisodium Citrate Dihydrate	6132-04-3	>= 99

3.2 Mixtures**4. First aid measures****4.1 Description of first aid measures**

- General advice : Get medical advice/ attention if you feel unwell.
Show this safety data sheet to the doctor in attendance.
- If inhaled : If breathed in, move person into fresh air.
- In case of skin contact : Immediately flush skin with large amounts of water.
- In case of eye contact : If easy to do, remove contact lens, if worn.
Immediately flush eye(s) with plenty of water.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

5. Fire-fighting measures**5.1 Extinguishing media**Suitable extinguishing media : Water spray
Dry powder
Carbon dioxide (CO₂)
Foam**5.2 Special hazards arising from the substance or mixture**

Specific hazards during fire : Do not use a solid water stream as it may scatter and spread

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fighting

fire.
Hazardous decomposition products formed under fire conditions.
Exposure to decomposition products may be a hazard to health.

5.3 Advice for firefighters

Special protective equipment for fire-fighters : Use personal protective equipment.
Wear self contained breathing apparatus for fire fighting if necessary.

Further information : Standard procedure for chemical fires.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
In the event of fire and/or explosion do not breathe fumes.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Avoid dust formation.
Avoid breathing dust.
Ensure adequate ventilation, especially in confined areas.

6.2 Environmental precautions

Environmental precautions : No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up : Use mechanical handling equipment.
Keep in suitable, closed containers for disposal.
Clean contaminated surface thoroughly.

6.4 Reference to other sections

No conditions to be specially mentioned.

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Avoid creating dust.
Do not breathe dust.
Avoid contact with skin and eyes.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.
Dust explosion class : St1

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place.

Further information on storage : Do not store at temperatures above 30 °C / 86 °F.

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Usage conditions

Advice on common storage : No materials to be especially mentioned.

Other data

: No decomposition if stored and applied as directed.

7.3 Specific end uses

8. Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Provide adequate ventilation.

Personal protective equipment

Respiratory protection : In the case of dust or aerosol formation use respirator with an approved filter.

Hand protection : Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work.
For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer.

Eye protection : Safety glasses

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
General industrial hygiene practice.
Do not breathe dust.
Avoid contact with skin, eyes and clothing.

Environmental exposure controls

General advice : No special environmental precautions required.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance : Crystalline product

Colour : white

Odour : odourless

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Flammability (solid, gas)	: does not ignite
Oxidizing properties	: No oxidising effect.
Molecular Weight	: 294,1 g/mol
pH	: 7,5 - 9,0 at 25 °C
Melting point/range	: > 150 °C
Density	: 1,86 g/cm ³ at 20 °C
Bulk density	: 850 - 1.050 kg/m ³
Water solubility	: 400 - 700 g/l at 20 - 25 °C
Partition coefficient: n-octanol/water	: log Pow: -1,8 - -0,2 Calculation

9.2 Other information**10. Stability and reactivity****10.1 Reactivity**

No decomposition if stored and applied as directed.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : None known.

10.4 Conditions to avoid

Conditions to avoid : Avoid dust formation.

10.5 Incompatible materials

Materials to avoid : no data available

10.6 Hazardous decomposition products

Hazardous decomposition products : Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.

11. Toxicological information**11.1 Information on toxicological effects**

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Acute toxicity

Acute oral toxicity

Trisodium Citrate Dihydrate : LD50 Oral: 5.400 mg/kg
Species: mouse
Method: OECD Test Guideline 401

LD50 Oral: 11.700 mg/kg
Species: rat
Method: OECD Test Guideline 401

Acute inhalation toxicity

Trisodium Citrate Dihydrate : no data available

Acute dermal toxicity

Trisodium Citrate Dihydrate : LD50 Dermal: > 2.000 mg/kg
Species: rat

Acute toxicity (other routes of administration)

Trisodium Citrate Dihydrate : no data available

Skin corrosion/irritation

Skin irritation

Trisodium Citrate Dihydrate : Species: rabbit
Result: No skin irritation
Method: OECD Test Guideline 404

Serious eye damage/eye irritation

Eye irritation

Trisodium Citrate Dihydrate : Species: rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Respiratory or skin sensitization

Sensitisation

Trisodium Citrate Dihydrate : Species: guinea pig
Result: Does not cause skin sensitization.
Method: OECD Test Guideline 406
No human information is available.

Germ cell mutagenicity

Remarks

Trisodium Citrate Dihydrate : In vivo tests did not show mutagenic effects

Carcinogenicity

Remarks

Trisodium Citrate Dihydrate : Did not show carcinogenic or teratogenic effects in animal

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experiments.

Aspiration hazard

Aspiration toxicity

Trisodium Citrate Dihydrate : No aspiration toxicity classification

12. Ecological information**12.1 Toxicity**

Toxicity to fish : No adverse effect has been observed in acute toxicity tests.

Toxicity to fish

Trisodium Citrate Dihydrate : LC50: > 18.000 - 32.000 mg/l
Exposure time: 672 h
Species: *Poecilia reticulata* (guppy)

Toxicity to daphnia and other aquatic invertebrates : No adverse effect has been observed in acute toxicity tests.

Toxicity to daphnia and other aquatic invertebrates.

Trisodium Citrate Dihydrate : EC50: 5.600 - 10.000 mg/l
Exposure time: 48 h
Species: *Daphnia magna* (Water flea)

Toxicity to algae : No adverse effect has been observed in acute toxicity tests.

Toxicity to algae

Trisodium Citrate Dihydrate : EC50: 18.000 - 32.000 mg/l
Exposure time: 96 h
Species: *Chlorella vulgaris* (Fresh water algae)
Method: OECD Test Guideline 201

Toxicity to bacteria : The substance is not to be considered to be inhibitory to marine bacteria (OECD 306).

Toxicity to bacteria

Trisodium Citrate Dihydrate : EC50: > 1.800 - 3.200 mg/l
Exposure time: 8 h
Species: Bacteria**12.2 Persistence and degradability**

Biodegradability

Trisodium Citrate Dihydrate : aerobic

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Result: Readily biodegradable.
98 %
Method: OECD Test Guideline 302

12.3 Bioaccumulative potential

Bioaccumulation

Trisodium Citrate Dihydrate : The product is miscible in water and readily biodegradable in both water and soil. Accumulation is not expected.

12.4 Mobility in soil

12.5 Results of PBT and vPvB assessment

Trisodium Citrate Dihydrate : This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

12.6 Other adverse effects

Biochemical Oxygen Demand (BOD)

Trisodium Citrate Dihydrate : 364 mg/g

Chemical Oxygen Demand (COD)

Trisodium Citrate Dihydrate : 480 mg/g

13. Disposal considerations

13.1 Waste treatment methods

Product : In accordance with local and national regulations. Where possible recycling is preferred to disposal or incineration. 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.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of as unused product.

14. Transport information

ADR

Not dangerous goods

IATA

Not dangerous goods

IMDG

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Not dangerous goods

RID

Not dangerous goods

15. Regulatory information**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Major Accident Hazard Leg- : 96/82/EC Update: 2003
islation Directive 96/82/EC does not apply

Notification status

EINECS : Not in compliance with the inventory
REACH : Notification number: 01-2119457027-40
TSCA : On TSCA Inventory
AICS : On the inventory, or in compliance with the inventory
DSL : All components of this product are on the Canadian DSL list.
ENCS : Not in compliance with the inventory
KECI : Not in compliance with the inventory
PICCS : On the inventory, or in compliance with the inventory
IECSC : On the inventory, or in compliance with the inventory
NZIoC : On the inventory, or in compliance with the inventory

15.2 Chemical Safety Assessment**16. Other information**

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.

This safety datasheet only contains information relating to safety and does not replace any product information or product specification.