

SAFETY DATA SHEET

Trisodium Citrate Dihydrate

Version 1.3 Revision Date:
EN 10/27/2022

SDS Number:
100000000139

Date of last issue: 07/21/2020
Date of first issue: 06/16/2017

SECTION 1. IDENTIFICATION

Product name : Trisodium Citrate Dihydrate
Substance name : Trisodium citrate dihydrate
Molecular formula : $C_6H_5O_7Na_3 \cdot 2H_2O$
Chemical identity : Trisodium 2-hydroxypropane-1,2,3-tricarboxylate dihydrate
CAS-No. : 6132-04-3
Chemical nature : Solid

Manufacturer or supplier's details

Details of the supplier of the safety data sheet

Company : Jiangsu Khonor Chemicals Co., Limited
Rm 1902 Easey Comm BLDG, 253-261,
Hennessy Rd Wanchai Hongkong
1.4 Emergency
<https://www.khonorchem.com/>

Recommended use of the chemical and restrictions on use

Recommended use : Formulation of preparations
Industrial use
Manufacture of chemical products
Chemical intermediate
Washing and cleaning products
Cosmetics, personal care products
Manufacture of pulp, paper and paper products
Polymer preparations and compounds
Plastic articles
Extraction of crude petroleum
Coatings and paints, thinners, paint removers
Water treatment chemicals
Laboratory chemicals
Manufacture of basic pharmaceutical products
Food/ feedstuff additives

Restrictions on use : None known.

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SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Hazards Not Otherwise Classified

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture	: Pure substance
Chemical nature	: Solid
Substance name	: Trisodium citrate dihydrate
CAS-No.	: 6132-04-3

SECTION 4. FIRST AID MEASURES

General advice	: Do not leave the victim unattended.
If inhaled	: If breathed in, move person into fresh air. If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
In case of skin contact	: Wash off immediately with soap and plenty of water.
In case of eye contact	: Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.
If swallowed	: Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.
Most important symptoms and effects, both acute and delayed	: None known.
Notes to physician	: Treat symptomatically.

SECTION 5. FIREFIGHTING MEASURES

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Suitable extinguishing media	: Water spray Dry powder Carbon dioxide (CO ₂) Foam
Unsuitable extinguishing media	: High volume water jet
Specific hazards during firefighting	: Exposure to decomposition products may be a hazard to health.
Hazardous combustion products	: Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).
Further information	: Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	: Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Avoid dust formation. Avoid breathing dust. Use personal protective equipment.
Environmental precautions	: If the product contaminates rivers and lakes or drains inform respective authorities.
Methods and materials for containment and cleaning up	: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion	: Provide appropriate exhaust ventilation at places where dust is formed.
Advice on safe handling	: Avoid creating dust. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.
Conditions for safe storage	: Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.
Materials to avoid	: No materials to be especially mentioned.

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Further information on storage stability : Keep in a dry place.
No decomposition if stored and applied as directed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Engineering measures : Provide adequate ventilation.

Personal protective equipment

Respiratory protection : No personal respiratory protective equipment normally required.

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

Hand protection
Remarks : Wear suitable gloves.

Eye protection : Safety glasses

Skin and body protection : Protective suit

Hygiene measures : General industrial hygiene practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : crystalline

Colour : white

Odour : odourless

Odour Threshold : Not relevant

pH : 7.5 - 9.0 (77 °F / 25 °C)
Concentration: 5 %

Melting point/range : > 302 °F / > 150 °C
Decomposition

Boiling point/boiling range : Decomposes below the boiling point.

Flash point : Not applicable

Flammability (solid, gas) : does not ignite

Upper explosion limit / Upper flammability limit : No data available

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Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : Not applicable

Relative vapour density : Not applicable

Relative density : 1.86 (68 °F / 20 °C)

Density : No data available

Solubility(ies)
Water solubility : 400 - 700 g/l (68 - 77 °F / 20 - 25 °C)

Partition coefficient: n-octanol/water : log Pow: -1.8 - -0.2
Calculation

Auto-ignition temperature : Not applicable

Decomposition temperature : Decomposes before melting.

Viscosity
Viscosity, kinematic : Not applicable

Explosive properties : Not explosive

Oxidizing properties : No oxidising effect.

Molecular weight : 294.1 g/mol

Particle size : ca. 0.2 - 1.25 mm

SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : Stable under recommended storage conditions.
No hazards to be specially mentioned.

Conditions to avoid : No data available

Incompatible materials : Not applicable

Hazardous decomposition products : Build-up of dangerous/toxic fumes possible in cases of fire/high temperature.
Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

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SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Acute oral toxicity : LD50 Oral (Mouse): 5,400 mg/kg
Method: OECD Test Guideline 401
Test substance: Non neutralised product
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : No data available

Acute dermal toxicity : LD50 Dermal (Rat): > 2,000 mg/kg
Test substance: Non neutralised product
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Species : Rabbit
Method : OECD Test Guideline 404
Result : No skin irritation

Serious eye damage/eye irritation

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Species : Rabbit
Result : No eye irritation
Method : OECD Test Guideline 405

Respiratory or skin sensitisation

Skin sensitisation

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Test Type : Maximisation Test

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Species	:	Guinea pig
Method	:	OECD Test Guideline 406
Result	:	Does not cause skin sensitisation.
Remarks	:	No human information is available.

Germ cell mutagenicity

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Genotoxicity in vitro	:	Test Type: Ames test Test system: Salmonella typhimurium Concentration: 0 - 10 mg/plate Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay) Result: negative Remarks: Information given is based on data obtained from similar substances.
Genotoxicity in vivo	:	Test Type: Chromosomal aberration Species: Rat Cell type: Bone marrow Application Route: Oral Dose: 0,3 mg/kg bw Method: OECD Test Guideline 475 Result: negative Test substance: Non neutralised product Remarks: Not classified

Carcinogenicity

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Carcinogenicity - Assessment	:	Not classifiable as a human carcinogen.
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IARC	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
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OSHA	No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.
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NTP	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
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Reproductive toxicity

Not classified based on available information.

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Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Reproductive toxicity - : No toxicity to reproduction
Assessment

STOT - single exposure

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Remarks : No data available

STOT - repeated exposure

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Remarks : No data available

Repeated dose toxicity

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

Species : Rat
NOAEL : 8,000 mg/kg
LOAEL : 16,000 mg/kg
Application Route : Oral
Exposure time : 10 d
Dose : 2, 4, 8, 16 g/kg bw/day

Aspiration toxicity

Not classified based on available information.

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

No aspiration toxicity classification

Further information

Product:

Remarks : No data available

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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Non-hazardous ingredients:

Trisodium Citrate Dihydrate:

- Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 440 mg/l
Exposure time: 48 h
Test Type: static test
Test substance: Non neutralised product
Method: OECD Test Guideline 203
- Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): 1,535 mg/l
Exposure time: 24 h
Test Type: static test
Test substance: Non neutralised product
Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : NOEC (Scenedesmus quadricauda (Green algae)): 425 mg/l
Exposure time: 8 d
Test Type: static test
Test substance: Non neutralised product
- Toxicity to microorganisms : TT (Pseudomonas putida): > 10,000 mg/l
Exposure time: 16 h
Test substance: Non neutralised product

Persistence and degradability

Components:

Trisodium Citrate Dihydrate:

- Biodegradability : Biodegradation: 97 %
Testing period: 28 d
Method: OECD Test Guideline 301B
Test substance: Non neutralised product
Remarks: Readily biodegradable.
- Biodegradation: 100 %
Testing period: 19 d
Method: OECD Test Guideline 301E
Test substance: Non neutralised product
Remarks: Readily biodegradable.
- Physico-chemical removability : Readily biodegradable.

Bioaccumulative potential

Components:

Trisodium Citrate Dihydrate:

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Bioaccumulation : Remarks: The product is miscible in water and readily biodegradable in both water and soil. Accumulation is not expected.

Partition coefficient: n-octanol/water : log Pow: -1.8 - -0.2

Mobility in soil

Components:

Trisodium Citrate Dihydrate:

Stability in soil : Remarks: Readily biodegradable.

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

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

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

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DOT

Not regulated as a hazardous material

TDG

Not regulated as a dangerous good

Special precautions for user

Not applicable

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

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Maine Chemicals of High Concern

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Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

The components of this product are reported in the following inventories:

TCSI	: On the inventory, or in compliance with the inventory
TSCA	: All substances listed as active on the TSCA inventory
AIIC	: On the inventory, or in compliance with the inventory
DSL	: All components of this product are on the Canadian DSL
ENCS	: On the inventory, or in compliance with the inventory
ISHL	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or 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

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical

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Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Items where relevant changes have been made to the previous version are highlighted in the body of this document by two vertical lines, red letters and grey shading.

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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.

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