


SAFETY DATA SHEET	
Tri Potassium Citrate, Monohydrate	MSDS No. Page 1 of 8

Complying with 1907/2006/EEC Regulation of 18 December 2006 ("REACH Regulation") and REGULATION (EC) No 1272/2008 (CLP) Reach registration number: 01-2119457580-38-0001

Section 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product name: Tri Potassium Citrate, Monohydrate
Trade Name: Tri Potassium Citrate, Monohydrate
Synonyms: Citric acid tripotassium salt; Tripotassium citrate
Chemical formula: C₆H₅K₃O₇·H₂O
Product type: White crystals
CAS number: 6100-05-6
EC number: 212-755-5 (anhydrous)
E-Number: E-332

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

1. Replaces Tri Sodium Citrate, whenever required to reduce the sodium content.
2. Used in the cheese and beverage industry, as well as for the production of jam and juices.

1.3 Details of the supplier of the safety data sheet

Company/undertaking identification

Gadot Biochemical Industries LTD.
117 Hahistadrut Ave.
POB 10636
Haifa Bay 26118, Israel
Tel: +972-4-8461-555
Fax: +972-4-8461-560

E-mail address of person responsible for this SDS: N/A

1.4 Emergency telephone number

Emergency telephone number (including hours of operation): +972-4-8461-555

Section 2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification in accordance to Regulation (EC) No. 1272/2008 (CLP/GHS)

Product name	GHS Classification
Tri Potassium Citrate, Monohydrate	Not classified

Classification according to Directive 67/548/EEC (DSD) or 1999/45/EC

Product name	EU Classification
Tri Potassium Citrate, Monohydrate	Not classified

2.2 Label elements

Labeling in accordance with Regulation 1272/2008 (CLP)

Hazard pictograms: Not required

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Signal word: Not required

Hazard statements: Not classified

Precautionary Statements: Not classified

2.3 Other hazard

N/A

Section 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance/preparation:

Product/ Ingredient name	Identifiers	%	EU Classification	GHS Classification
Tri Potassium Citrate, Monohydrate	CAS number: 6100-05-6 EC number: 212-755-5 (anhydrous)	100	-	-

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in section 8.
See section 16 for the full text of the H-statements and R-phrases declared above.

Section 4. FIRST AID MEASURES

4.1 Description of first aid measures

- Eyes contact:** In case of contact with eyes rinse opened eyes under running water for at least 15 minutes and seek medical advice.
- Skin contact:** In case of contact with skin wash off immediately with mild soap and plenty of water for at least 15 minutes, and seek medical advice.
- Inhalation:** Remove the casualty into fresh air and keep him calm. Apply artificial respiration if necessary and get medical attention immediately.
- Ingestion:** If large quantities of this material are swallowed, call a physician immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If victim is conscious give water to drink.


4.2 Most important symptoms and effects, both acute and delayed

N/A

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician: No specific antidote, contact Poisons Information Center. All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Special treatments: No specific treatment

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Section 5: FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

Not suitable: N/A

5.2 Special hazards arising from the substance or mixture

Under fire emits potassium oxides, irritating and toxic fumes.

5.3 Advice for firefighters

Special protective equipment for fire fighters: Fire fighters should wear full protective clothing and self-contained breathing apparatus in positive pressure mode.

Remark: Move containers from fire area if possible to do so without risk.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective clothing. Avoid contact with skin eyes and inhalation of vapors. Remove all sources of ignition. Ventilate area of spill.

6.2 Environmental precautions

Do not let this chemical enter the environment. Keep away from drains, surface and ground water.

6.3 Methods and materials for containment and cleaning up

Mark danger area. Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. In case of dust production: keep upwind. Clean contaminated surfaces with an excess of water.

6.4 Reference to other sections

See Sections 1 for emergency contact information

Section 7: HANDLING AND STORAGE


7.1 Precautions for safe handling

Handling: Avoid contact with eyes, skin and clothing. Do not breathe dust. Avoid raising dust. Wash thoroughly after handling.

Hygiene Measures: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also section 8 for additional information measures.

7.2 Conditions for safe storage, including any incompatibilities

Storage: Keep containers tightly closed, in dry, cool and well-ventilated place. Keep away from heat, sparks and open flame. Do not store together with strong acids and strong oxidizing agents. Protect from moisture.

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7.3 Specific end use(s): N/A

Section 8: EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

Occupational exposure limit values: N/A

Deraived effects levels:

Recommended occupational and consumer exposure limit values (following from the preformed CSA):
N/A

8.2 Exposure controls

Enginnering Measures

Use process enclosures, local exhaust ventilation, or others engineering controls to keep airborne levels below recommend exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Person Protective measures

Respiratory protection: Dust respirator. Be sure to use an approved/certified or equivalent equipment. Wear appropriate respirator when ventilation is inadequate.

Hand protection: Wear protective disposable gloves to prevent skin exposure.

Eye protection: Wear protective safety glasses.

Skin protection: Wear appropriate long-sleeved clothing to minimize skin contact.

Environmental exposure controls: Not available

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance: White crystals

Odour: Practically odorless

Odour threshold: N/A

pH: 8-9.5

Melting point/Freezing point: 230°C

Initial boiling point/boiling range: N/A

Flash point: Not relevant

Evaporation rate: N/A

Flammability: Non flammable

Upper/lower flammability or explosive limits: N/A

Vapor pressure: Negligible (Tri potassium citrate)

Vapor density (air=1): N/A

Relative Density: 1.98 at 20°C (Tri potassium citrate)

Solubility(ies): In water: 154 gr/100 ml at 25°C; In ethanol: insoluble.

Partition coefficient Octanol/Water: N/A

Auto-ignition temperature: N/A

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Decomposition temperature: 230°C
Viscosity: Not relevant
Explosive properties: Not explosive
Oxidizing properties: Not oxidizing

9.2 Other information:

Molecular weight: 324.42 gr/mol
Taste: Saline taste

Section 10: STABILITY AND REACTIVITY

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients

10.2 Chemical stability

Unstable on exposure to moisture.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

Keep away from heat, sparks and open flame. Protect against moisture.

10.5 Incompatible materials

Strong acids and strong oxidizing agents.

10.6 Hazardous Decomposition products:

N/A

Section 11: TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity: N/A

Skin corrosion/irritation: N/A


Serious eye damage/irritation: N/A

Respiratory or skin sensitization: N/A

Germ cell mutagenicity:

Citric acid has been tested in a number of bacterial assays, all of which gave negative results. There is information from a lower reliability study that citric acid and sodium dihydrogen citrate do not cause chromosome aberrations *in vitro*: this result does not agree with a recently published study. Evidence for genetic toxicity has been described in a recent publication of results from an *in vitro*. An *in vivo* chromosome aberration study does not support the conclusion of the recently reported *in vitro* studies in mammalian cells, and an *in vivo* rodent dominant lethal assay also showed no evidence of chromosome damage, so it is considered that the *in vitro* results do not reflect a potential for genetic toxicity.

although effects have been observed in some *in vitro* studies, Citric acid is negative in *in vivo* genotoxicity testing,

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in vitro studies. Moreover, it has been used as a food additive over a long period. In addition, citrate plays a central role in cellular metabolism, so it is considered that classification for mutagenicity is not required. Information available in the public domain on tests carried out on other salts of sodium, calcium, potassium and magnesium indicates that the metal ions are not expected to contribute to the genetic toxicity of their corresponding salts. Therefore, information from citric acid may be read-across to the other citrate salts in this category, and information may be read-across between the citrate salts, and classification of the citrate salts in the category for mutagenicity is not required.

It is not expected that sodium, calcium, potassium or magnesium counter ions will contribute significantly to the genetic toxicity of their corresponding salts. Therefore, information from citric acid may be read-across to the other citrate salts in this category, and information may be read-across between the citrate salts, and classification of the citrate salts in the category for mutagenicity is not required.

Carcinogenicity:

Citric acid: In a rat feeding study, animals dosed with 5% citric acid in the diet did show an excess of tumours in comparison with control animals when tested over a period of 2 years. However, there was some evidence that high doses of citrate salts potentiated the incidence of tumours produced by co-administration of known bladder carcinogens. Where citric acid or citrate salts were administered alone during these studies, no dose-related tumours were noted.

It is not expected that sodium, calcium, potassium or magnesium counter ions will contribute significantly to the genetic toxicity of their corresponding salts. Therefore, it is possible to reliably read-across from citric acid to the other citrate salts in this category.

Reproductive toxicity:

Citric acid: various studies on rats, mice and guinea pigs using a number of different conditions and protocols: prior to mating, during pregnancy and also a two-generation study were summarised in the OECD report. In some the doses were defined and in others the regimen was *ad libitum* feeding of a defined concentration of citric acid in the diet, with or without measurement of food uptake. No adverse effects on females or foetuses were reported except slight dental attrition of the females in some of the studies. The NOEL values reported were often meaningless as it was the only dose used, and that gave no adverse effects. In the same report described above, Wright and Hughes (1976c) showed the same dose (5%) of citric acid in the diet of female mice and rats had no effect on the reproductive performance as measured by pregnancy rate, number of live births, still births and pup survival rate.

It is not expected that sodium, calcium, potassium or magnesium counter ions will contribute significantly to the genetic toxicity of their corresponding salts. Therefore, it is possible to reliably read-across from citric acid to the other citrate salts in this category.

Specific target organ toxicity (single exposure): N/A

Specific target organ toxicity (repeated exposure): N/A

Aspiration hazard: N/A

Other effects: Prolonged or repeated exposure may cause affection/discoloration of the teeth, irritation of the eye tissue, inflammation/damage of the eye tissue and tingling/irritation of the skin.

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Section 12: ECOLOGICAL INFORMATION

12.1 Toxicity: N/A

12.2 Persistence and Degradability: biodegradable in water.

12.3 Bioaccumulative potential: N/A

12.4 Mobility in soil

Soil/water partition coefficient (Koc) : N/A

12.5 Results of PBT and vPvB assessment

Not available

12.6 Other adverse effects None

Section 13: DISPOSAL CONSIDERATIONS

Methods of disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations. Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Hazardous waste: Waste material code (Flanders): 213

Section 14: TRANSPORT INFORMATION

International transport regulations

14.1 Un number:

ADR/RID: -

IMDG: -

IATA: -

14.2 Proper shipping name:

ADR/RID: Not regulated

IMDG: Not regulated

IATA: Not regulated

14.3 Transport hazard class(es)

ADR/RID: -

IMDG: -

IATA: -

14.4 Packing group

ADR/RID: -

IMDG: -


IATA: -

14.5 Environmental hazard

Marine Pollutant: No

14.6 Special precautions for user

Not available

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14.7 Transport to bulk according to Annex II of MARPOL 79/78 and the IBC Code

Not available

Section 15: REGULATORY INFORMATION

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

EU Directives 67/548/EEC and 1999/45/EC (including amendments)

EU Regulation(EC) No.1907/2006 (REACH), No 1272/2008 (CLP)

15.2 Chemical safety assessment

In accordance with REACH article 14, a chemical safety report has been carried out for citrates.

Section 16: OTHER INFORMATION

Training advice: Before using/handling the product one must read carefully present MSDS.

Recommended restriction: N/A

Key Legend Information:

ACGIH- American Conference of Governmental Industrial Hygienists

OSHA- Occupational Safety and Health Administration

NTP- National Toxicology program

IARC- International Agency for Research on Cancer

ND- Not Determined

N/A- Not available

R-phrases- Risk phrases

S-phrases- Safety phrases

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To the best of our knowledge the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.