

# TRIZINC CITRATE TRIHYDRATE

CAS – Nº: 546 - 46 - 3

FORMULA:  $Zn_3 (C_6H_5O_7)_2 \cdot 3H_2O$

M. W. : 628,4

## SPECIFICATION DATA SHEET

### 1. Description.

Trizinc Citrate Trihydrate is the salt produced by the reaction between Citric Acid with zinc oxide; it has three molecules of water associated. Product is available as a white crystalline powder.

Trizinc Citrate Trihydrate is odourless and neutral taste. 2,6 g of zinc citrate is soluble in one dm<sup>3</sup> of water at 25°C. Zinc Citrate decomposes (melts) at 250°C. This product is manufactured with non-allergens ingredients, non-genetically modified organism and non-organic volatiles solvents or substances.

### 3. Main Uses.

WHO / FAO through the expert committee of food additives and the European Community have identified zinc as an essential nutrient with a specific role in over 300 enzymatic reactions in the biochemistry of body in humans, animals and plants cells. It is used in pharmaceutical and food as supplement or complement. Trizinc citrate trihydrate is used in toothpaste, mouthwash to preserve the dental and oral health. Zinc is also used in agriculture as soil fertilizer and micronutrient supplier to plants.

### 3. Standard Specifications.

The Trizinc citrate trihydrate test methods are described in the current US Pharmacopeia USP.

3.1 REQUIREMENT	SPECIFICATION	UNITS
Appearance	White cristal or powder	None
Colour (sol 2M HCl)	Transparent	None
Odour	Odourless	None
Clarity of solution (sol 2M HCl)	6,0 max.	NTU
Identification (IR test)**	IR spectrum	None
Assay $Zn_3 (C_6H_5O_7)_2$ anhydrous	99,0 min - 100,5 max.	% w/w
(as Zinc)	30,9 min - 31,5 max.	% w/w
(as Citrate)	59,6 min - 60,8 max.	% w/w
pH (suspension 3% w/v)	5,0 min. – 7,0 max.	None
Loss on drying (3g, 105 °C, 2h)	0,50 max.	% w/w
Residues on ignition (5 g, 500 °C, 3hours).	38,4 min – 39,2 max.	% w/w
Antimony (as Sb)*	5,0 max.	mg/kg
Arsenic (as As)*	2,0 max.	mg/kg
Cadmium (as Cd)*	2,0 max.	mg/kg
Iron (as Fe)*	25 max	mg/kg
Lead (as Pb)*	10,0 max.	mg/kg
Mercury (as Hg)*	1,0 max.	mg/kg
Chloride (as chloride)*	500 max	mg/kg
Sulphates (as sulphate)*	500 max	mg/kg

\*Method following the skip lot model, \*\* One test is performed every semester.

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### 3.2 Particle size.

Tri Zinc citrate trihydrate is available in accordance with customer requirements:

PRODUCT	*PARTICLE SIZE	PORCENTAGE
Zinc citrate trihydrate	More than 52 micras.	1% máx.
	More than 250 micras.	0,001 %
	Particle size Average $10 \pm 5$ micras.	

\* Particle size distribution measure by laser diffraction according to the **MIE-SCATTERING** test model

### 3.3 Typical Bulk Density.

The bulk densities described below are typical values of the bulk density of Zinc Citrate Trihydrate and are informative purpose:

DENSITY	lb / ft <sup>3</sup>	kg / m <sup>3</sup>
ZINC CITRATE TRIHIDRATE	45,6 – 48,7	730 - 780

### 4. Transport and Storage conditions.

Zinc Citrate trihydrate Avoid high humidity and high temperatures. Store at a temperature below 30 °C and a relative humidity less than 70% on dry pallets, under cover, and in well-ventilated places according to Good Storage Practices (GSP) is easily compacted under improper conditions of storage and handling. Its estimated useful life is 5 years when stored in original packaging; recommended store and a temperature below 20 °C and a relative humidity less than 50% for long periods of storage.

### 5. Safety data.

Zinc Citrate trihydrate could be irritating in eyes, skin and airways by contact. Please use personal protective equipment, as gloves, safety glasses and respiratory protection. It is recommended to be handled in well ventilated areas and in the explosion proof equipment.

Environmental hazard: This product is classified by UN and CEE as pollutant of marine life. Hazard statement: H400. Do not allow to enter sewers or surface or groundwater for a long time.

### 6. Regulatory Issues.

Trizinc citrate trihydrate is recommended by the European Regulation (EC) No. 1925/2006 for food fortification, is also accepted by Directive 2002/46 / EC of the European Parliament and Annex II Directive for use in food supplements and Directive 2001/15 / EC for the special food and formulate. Trizinc citrate is certified under Good Manufacturing Practices GMP, BRC, ISO 9001, ISO14001, OHSAS 18001, ISO 28000, Kosher for Passover and Halal, also NonGMO project verified.

### 7. Availability and Technical Assistance.

Trizinc Citrate trihydrate is available in following references 25kg. For further information on packaging, samples or technical assistance, please contact to our marketing and sales assistant: Colombia + + (57 2) 431 0649 / 431 0785, in North America + + (1630) 200 1326, and Brazil + + (55 11) 965 77 0101.