

NEW



MARKETING BRIEF

Solufeed *Sodium Free* EDTA Chelates

An advanced range of chelated micronutrient fertilizers
without sodium

Highlights

- ❖ New speciality chelate range.
- ❖ Sodium free
- ❖ Enhanced solubility.
- ❖ Technically superior to traditional EDTA-based chelates.
- ❖ Advanced spray agglomerated micro granule formulations.



Introduction

Traditional EDTA chelates have sodium as the “counter ion” whereas *Solufeed Sodium Free EDTA chelates* are not – they are based on potassium (K) or ammonium (NH₄) counter ions.

Although sodium (Na) is a so called *functional* element for many plants, excess sodium can be problematic. Very high levels can be directly toxic while more moderate levels reduce the ability for plant roots to absorb water leading to stress. Sodium also influences soil physics and is responsible for ‘slumping’ where in severe cases the open, healthy soil structure is effectively destroyed.

The amount of sodium applied to soil by the use of most fertilizers is extremely small and has insignificant consequences in normal agricultural situations. However, there is some concern being shown especially in areas where saline and sodic soils are present. A trend towards reducing the sodium content of fertilizers is therefore being seen.

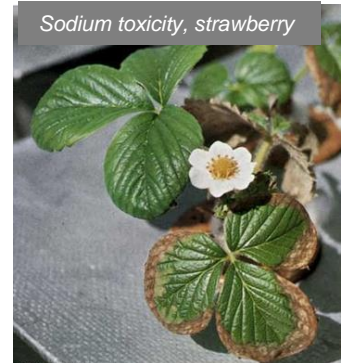
In modern closed hydroponics systems great care is needed to ensure that the circulating nutrient solution remains balanced. Sodium is an element that can build up to harmful levels, and again selecting low sodium or sodium free nutrient sources can be advantageous.

Solufeed Sodium Free EDTA chelates are new EDTA formulations of copper, iron,

manganese and zinc. A reformulated *Solufeed Sodium Free TEC™*, a balanced mixture of all six micronutrients is also available. These are companion products to other Solufeed chelates and suitable for use where excess sodium is a concern.

Sodium, why can an excess a problem?

- ❖ Can be toxic, causing leaf/root damage, plant loss etc.
- ❖ Disrupts water movement in plants.
- ❖ Adds to solution conductivity but not nutritional.
- ❖ Reduces uptake of nutrients through competition.
- ❖ In soil causes slumping and loss of structure.



Uses of Solufeed Sodium Free Chelates

- ❖ Can replace traditional sodium based EDTA products in all applications.
- ❖ Highly efficient micronutrient sources in hydroponics and fertigation particularly those where excess sodium is an issue. Such as in recirculating hydroponics systems and sodic or saline soils.
- ❖ Effective for the correction of micronutrient deficiencies in most crops by foliar application.
- ❖ Useful where high solubility is required such as creating stock tank solutions.

Features and benefits of Solufeed Sodium Free Chelates

- ❖ Sodium free formulations so ideal for situations where sodium levels in the soil or feed solution are an agronomic issue.
- ❖ High solubility for the confident preparation of concentrated stock solutions.
- ❖ Supplied as free flowing, dustless spray agglomerated microgranules for ease of use.
- ❖ Compatible with soluble phosphates thereby remaining effective in hydroponics and liquid feed systems.
- ❖ Useful counter ion fertilizer contribution (K or NH₄)
- ❖ Excellent environmental and regulatory credentials.



Analysis and properties of Solufeed Sodium Free Chelates

Individual elements

Property	Product name			
	Sodium Free Cu	Sodium Free KaliFer	Sodium Free Mn	Sodium Free Zn
Designation	EC FERTILIZER	EC FERTILIZER	EC FERTILIZER	EC FERTILIZER
Description	Copper ammonium ethylenediaminetetraacetic acid	Ferric potassium ethylenediaminetetraacetic acid	Manganese dipotassium ethylenediaminetetraacetic acid	Zinc dipotassium ethylenediaminetetraacetic acid
Analysis (% w/w)	15.5	13.0	12.5	14.5
Molecular formula	C ₁₀ H ₂₀ N ₄ O ₈ Cu HN ₄	C ₁₀ H ₂₀ N ₄ O ₈ Fe K	C ₁₀ H ₂₀ N ₄ O ₈ Mn K ₂	C ₁₀ H ₂₀ N ₄ O ₈ Zn K ₂
Appearance	Blue microgranules	Light brown microgranules	White microgranules	White microgranules
Bulk density (g/cm ³)	0.85	0.80	0.85	0.85
Practical pH stability range (in aqueous solution)	4.0 – 7.5	4.0 – 7.5	4.0 – 6.5	4.0 – 7.5

Solufeed Sodium Free TEC™

Description: A sodium free formulation of copper, iron, manganese and zinc EDTA chelates together with inorganic boron and molybdenum sources. EC FERTILISER.

Analysis (% w/w)

Boron (as polyborate)	0.92
Copper (as EDTA)	0.23
Iron (as EDTA)	8.27
Manganese (as EDTA)	2.00
Molybdenum (as molybdate)	0.15
Zinc (as EDTA)	1.16

Appearance: Green blended powder.

Directions for use

Hydroponics/fertigation nutrient solutions

Please refer to the table below which show the amount of *Solufeed Sodium Free chelate* required per 1,000 litres of water to create an elemental concentration of 1 ppm or 1 µmol/litre. Normally this is amount is used to make a 10 litre stock which is further diluted 1:100.



	Product name			
	Sodium Free Cu	Sodium Free Kalifer	Sodium Free Mn	Sodium Free Zn
Amount of product (grams) to supply 1 ppm elemental nutrient in 1000 litres of irrigation water.	6.5	7.7	8.0	6.9
Amount of product (grams) to supply 1 µmol/litre elemental nutrient in 1000 litres of irrigation water.	0.41	0.43	0.42	0.45

For details about the use of *Solufeed Sodium Free TEC™* in hydroponics and fertigation, please refer to the specific Technical Data Sheet.

Foliar application



The appropriate *Solufeed Sodium Free EDTA chelate* or mixture of chelates, should be dissolved in a convenient volume of water to suit the spraying machine being used and the target crop leaf area. The following points should be observed:

- 1 The sprayer should be fitted with nozzles that produce a fine mist.
- 2 Only sufficient spray solution should be applied to coat the leaves and stems with a film of moisture with little or no "run off".
- 3 Spraying should be carried out on a calm day BUT NOT DURING STRONG SUNSHINE OR HIGH TEMPERATURES. The best time is late afternoon or evening.
- 4 If rain is imminent, spraying should be postponed. If rain falls within 4 hours of spraying, the crop should be re-sprayed 3 or 4 days later.

NB Fruit Crops

Do not exceed a solution of 0.1% (1 g/l) for any one or combination of *Solufeed Sodium Free EDTA chelates*. Some fruit varieties and cultivars can exhibit unpredictable sensitivity to EDTA chelates. Where local experience of successful use is not available, we strongly recommend small-scale test applications before wide spread use.

Application rates, general

Solufeed Sodium Free EDTA chelates may be applied in one application of 0.5 - 1.0 kilograms per hectare but optimum results can be expected if repeat lower rate applications are used. In general, foliar applications should be started early in the season as soon as there is sufficient leaf area to absorb the spray.

Water Volume

The amount of *Solufeed Sodium Free EDTA chelates* to be applied should be mixed with a volume of water appropriate to the crop leaf area of the type of spraying machine being used. Typically,

Arable crops: 200-600 litres per hectare.
Fruit crops: 500-1000 litres per hectare.

NB: Do not exceed a solution concentration of 0.1% (100 grams per 100 litres of water).

Mixing With Water

Simply add the microgranules to water while it is being agitated. Continue agitation for a short while to ensure complete dissolution.

Compatibility

Solufeed Sodium Free EDTA chelates are compatible with other *Solufeed* chelates and with solutions containing soluble phosphates such as liquid feeds.

Precautions

See product MSDS and label, available upon request.

Packaging

To be advised.

Important

The information in this document has been prepared carefully and is provided in good faith. The application, use and processing of any material together with regulatory compliance is the absolute responsibility of the Buyer. All technical information or other advice provided by the Seller in any form is given without warranty to the full extent provided by law.

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