YaraVita™ Rexolin® Ca10

EDTA Chelated Calcium – Product Data Sheet

Application

In agriculture and in horticulture as foliar feed (secondary nutrient).

Specifications

Item	Specification
	Method of analysis available on request
Appearance	Free flowing white microgranules
pH (1% solution)	6.5 - 7.5
Calcium (Ca) content, typical*	9.7%
Calcium (Ca) content, minimum	9.5%
Level of chelation	fully

Chloride content max 0.1%

* Label value

Main Characteristics

YaraVita™ Rexolin® Ca10 is a stable, water-soluble and non-dusting calcium chelate;
Calcium is chelated by EDTA.

Item	Characteristic
Stable within pH	5-10
Bulk density untapped	approx. 650 - 850 kg/m3
Solubility in water	approx. 800 g/l (20 °C), >1,500 g/l (80 °C)

Storage

Store in original packing at a dry place at ambient temperature (below 25 °C).
It is advised to re-test after three years of storage.

Chemical Name

Ethylenediaminetetraacetic acid calcium-disodium complex; EDTA-CaNa2.2H2O

Chemical Formula

$C_{10}H_{12}N_2O_8CaNa_2.2H_2O$

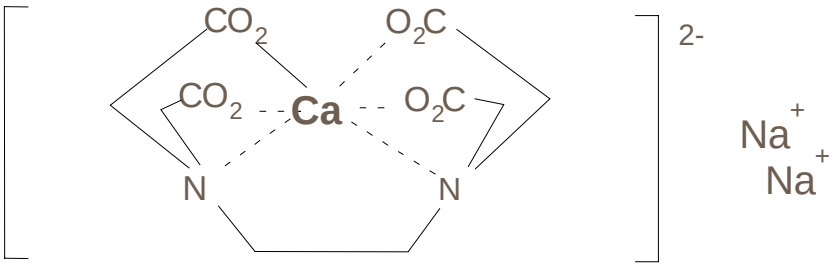
Molecular Weight

410.3

Environmental Aspects

Biodegradability: slow
Chemical oxygen demand (C.O.D.): approx. 580 mg/g

Structure



Further Information

For transport, handling and first aid instructions please refer to the Safety Data Sheet, which is available on request.
For samples, technical service and further information (ask for our User Recommendation Sheets), please contact your nearest Yara Sales Office.

March 2007
update 1) New Spec No 2) Packing 3) Address

YaraVita™ Rexolin® Ca10

User Recommendation Sheet

YaraVita™ Rexolin® Ca10 is a product developed for usage on calcium deficient crops through foliar application.
YaraVita™ Rexolin® Ca10 can also be used combined with water soluble compound (NPK) fertilizers. For other applications and products please ask for our other Akzo Nobel Micronutrients products.
YaraVita™ Rexolin® Ca10 contains 97 grams calcium per kg of product as **Ca-disodium-EDTA** derived from ethylenediaminetetraacetic acid.

Crops and Soils Susceptible to Calcium Deficiency
Calcium is a secondary nutrient mostly commonly abunded in soils. Calcium contents vary between 1-20 g/kg and can rise upto 250 g/kg soil (calcareous soils). In the soil solution calcium concentrations vary from 25-15 mg/l, which is abundant for plants to take up calcium. Calcium deficient soils are peat soils (acid soils) and sodic soils (mainly K^+ and Na^+ adsorbed to the soil). Liming can repair these soils.
Although mostly calcium is available to the plant, in some cases deficiency might occur. Fruit, grape, apple, litchi, strawberry, tomato, celery, peanut, cotton, beets and carrot are prone to calcium deficiency. Apple obtains its nutrients in the first stadium, so calcium uptake by the roots is restricted to this phase. Calcium applications should be done foliar.

Effects and Symptoms of Calcium Deficiency

Calcium pectate has its most important role in strengthening of the cell walls and regulation of the permeability. Due to the high demand of calcium in young tissue (production of new cells), deficiency symptoms occur in young leaves and shoots. Calcium is not replaceable from old to new tissue. The proportion of calcium in the cell walls is of importance for the susceptibility of the tissue to fungal and bacterial infections. Thereby calcium ensures the stability of chloroplasts and mitochondria.
In general during fruit setting calcium improves fruit quality as measured by control of bitter pit, fruit finish, fruit color, increase juiciness and fruit firmness. Calcium reduces incidence of scald and improves shelf life. Calcium deficiency in tomato and sweet pepper results in blossom end rot. Deficiency in cherry, peach, litchi, nectarine and plum cause cracking.

Leaf edges from strawberry, cabbage, lettuce and endive suffer from 'tip burn'. In celery 'black heart' is the symptom of calcium deficiency.

Only young root tips can take up calcium. Calcium uptake is reduced at the root by competition of potassium and ammonium. Deficiencies of boron and iron induce calcium deficiency because of their regulating functions in transport and absorption of calcium.

These are the most frequent symptoms of calcium (Ca) deficiency:

- Tip burn: Necrosis at the leaf edge in young leaves and shoots
- Earlier ripening of fruits
- Blossom end rot (tomato)
- Reduction in fruit firmness and juiciness
- Cracking of cherries, peach, litchi, nectarine and plums
- Higher susceptibility to fungal and bacterial infections
- Decreased shelf-life

Directions for Use

YaraVita™ Rexolin® Ca10 is meant for application to plants, after diluting with water.

Application of the Product

The product can be applied by foliar feeding and can be used in combination with water soluble compound (NPK) fertilizers in one tank mixture.

Foliar Application

Foliar feeding provides a rapid response and is recommended when fast correction is necessary. Repeated applications are necessary. For improving leaf coverage it is advisable to add a wetting agent, efficacy may be further increased by adding urea.
Dissolve the product to a suitable concentration, and apply with spraying equipment. The pH of final concentration should not be lower than pH 5, final EC should not exceed 1. Dose rates for a specific crop should be tested first on a small scale. Repeat the application after 2 weeks.

Apply **YaraVita™ Rexolin® Ca10** in vegetative or growth stage of vegetables and in fruit crops also in the generative or fruiting stage. In apple foliar application in the first half of fruit formation tends to give less risks of scorching compared to later applications. Do not apply during blooming. To reduce the risks of leaf scorching avoid application during hot, sunny days. Treatments in the early morning are preferred.

Compound Fertilizers
In storage tank mixtures with compound fertilizers containing phosphates and/or sulfates **YaraVita™ Rexolin® Ca10** prevents precipitation of Ca-salts (e.g. gypsum). **YaraVita™ Rexolin® Ca10** is stable from pH 5 - 10. Never bring **YaraVita™ Rexolin® Ca10** in direct contact with concentrated acids.

Compatibility
The product can be mixed with most other NPK fertilizers like phosphate foliar fertilizers, and agrochemicals without inactivation, precipitation or scorching problems. Do not mix with chemicals based on metal compounds (Fe, Zn, Cu, and Mn).

Use other chelated micronutrients, when applied at the same time, to ensure the performance of the calcium chelate. With liquid fertilizers use the mixture without delay. Test mixed product first on a small scale.

Mixing
Add the required amount of product to a half filled sprayer tank, then complete the filling process. Ensure that sprayer nozzles are adequate for 200-1000 liters water/ha. Use the higher volume under dry conditions, when treating larger crops and at dense foliage.

Precautions
- ✓ Store in original container, keep tightly closed and store in cool dry place.
- ✓ Store away from children, pets, livestock and foodstuff.
- ✓ Wash hands after application and before meals.

No health hazards are involved in normal handling of **YaraVita™ Rexolin® Ca10** but it is advisable to follow the above precautions.

Packing
Contact Yara for information regarding packaging. Shelf life of the product is more than 3 years.

Dose Rates
The following dosages can be used as guidance. Always adapt to the crop and cultivar involved and to the local circumstances.

A. Glass house Crops:

Crop	Foliar application 2 weeks interval
Vegetables	1 g/l
Cut flowers	1 g/l
Potted flowers, pot plants	0.8 g/l

B. Arable Crops and Open Field Horticultural Crops:

Foliar application		
Citrus	1 kg/ha	Apply in a water volume that gives adequate coverage of the crop (200-1000 L). Do not exceed a concentration of 0.1%. Repeat after 2 weeks.
Apple	1 kg/ha	
Stone fruits	0.8 kg/ha	
Grapes	1 kg/ha	
Vegetables	0.5-0.8 kg/ha	

1 kg/ha = 0.9 lbs/acre 1 g/l = 0.13 oz/gal

Main characteristics
- Solubility in water: 800 g/l (20 ºC)
- EC (1 g/l): 0.37 mS/cm
- Chloride free

Modified: June 2002