

Product Analysis (w/v)

Copper (Cu) – 60 g/L

pH – 6.5 to 7.0

Specific gravity (SG) – 1.18

**SENTINEL RANGE****SENTINEL COPPER**

60 g/L Copper as EDTA Chelate

**Wilchem Sentinel:**

Wilchem Sentinel is a range of Ethylenediaminetetraacetic acid (EDTA) chelates. EDTA forms *hexadentate chelants* – they form six bonds to the nutrient to form a “chelate ring”. The chelate ring is stronger than a single ionic bond and protects the nutrient and maintains it in solution. EDTA chelates protect the nutrient from interactions with other crop care products making it the most compatible product on the market.

Uses:

Sentinel Copper is used to correct and prevent copper deficiency in a wide range of crops. Sentinel Copper can be applied via fertigation, furrow injection or foliar applications for broadacre, viticultural and horticultural production where manganese deficiency may occur.

Directions for use:

Sentinel Copper has been formulated to protect the copper molecule from interactions in tank mixes and in soils. It is best suited to foliar and furrow injection applications where traditional liquid fertilisers are not suitable.

Copper Deficiency:

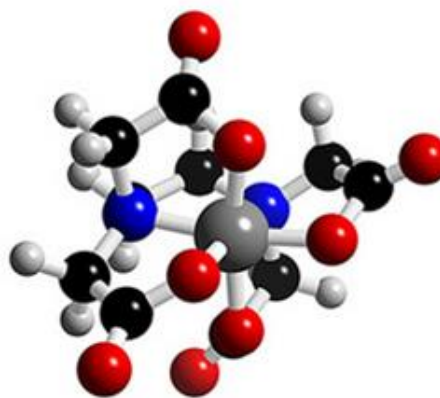
Copper deficiency mainly occur in low pH soils, lateritic ironstone soils, sandy soils that are low in organic matter and in organic soils (peats). Uptake of copper decreases with increased soil pH and is adversely affected by high levels of available iron (Fe). Cereal crops, potatoes and fruit crops grown on acidic sandy soils are particularly sensitive to copper deficiency. Symptoms are generally difficult to see and are referred to as “hidden hunger”.

Deficiency Symptoms:

- Twisting of the flag leaf in cereals
- Yellowing of the new growth in severe deficiencies
- Patchy appearance of the crop
- Poor seed set

The Function:

Copper plays a key role in chlorophyll production and photosynthesis. It is important for cell wall metabolism, oxidative stress protection, water movement, seed production and biogenesis of molybdenum cofactor.



EDTA Structure
Diagram of the octahedral structure of copper EDTA forming a hexadentate chelate.

Crop Type	Application	Rate L/Ha	Timing	Water L/Ha
Cereals	Foliar	0.5 to 2	Apply from mid tillering to flag leaf emergence	75
	Furrow Injection	2 to 2.5		
Canola	Foliar	0.5 to 2	Apply at 4 to 8 leaf stage	75
Lucerne, Legumes	Foliar	0.5 to 2	10 to 14 days prior to flowering	75
Vegetables	Foliar	1 to 2	Apply when sufficient foliage is present	500
	Fertigation	2 to 4		
Grapevines	Foliar	1 to 2	Apply when deficiency appears	500
	Fertigation	2 to 3		
Tree crops	Foliar	1 to 2	Apply early in the crop cycle as required	500 to 1000
	Fertigation	4 to 6		

Note: Any recommendations are a guide and must be adapted to suit local conditions. Adjust rates based on tissue tests, soil tests, local knowledge and the recommendation of your agronomist. Do not exceed a solution of 0.25 % on tree crops.

Compatibility with Agricultural Chemicals:

Sentinel Copper is compatible with a wide range of crop protection products. It is stable in alkaline soils and in the presence of soluble phosphates. Check the Compatibility Guide as a reference. A jar test should be performed or test application before preparing a full tank mix.

Other Details:

Liquid fertilizers can be corrosive to metals so flush equipment clean after use. Avoid inhaling fumes. Avoid contact with eyes and skin. Wash thoroughly with soap and water after handling. Protect from frost. Do not store for extended periods in direct sunlight.