

Nutri-Key Manganese Shuttle™

Timing is the trick with trace mineral applications. Manganese is a reproduction booster and timing should reflect that feature.

Manganese is often termed the seed energiser and it is an important element for seed germination and seed formation. Nutri-Key Manganese Shuttle™ offers chelated manganese in a balanced formulation which covers the full spectrum of background nutrition.

Benefits

- Manganese accelerates seed germination and is required for carbohydrate and nitrogen metabolism.
- Provides high-analysis, cost-effective manganese correction.
- Sequesters, chelates and delivers more manganese than previously possible.
- Reduced stability problems.
- In soil situations, Shuttle™ can continue to operate beyond the original quantity dosed, complexing and converting other dormant ions into useable plant food.
- Also serves as a carbohydrate-based microbial promotant.



PACKAGING

1 L, 5 L, 20 L, 200 L, 1000 L
Product Code: NKMNS



Nutri-Key Manganese Shuttle™

Application Rates

Foliar:

Minimum Dilution 1:100
Small Crops, Turf & Vines
 2 - 3 L per ha
Orchard Crops
 3 - 5 L per ha
Broadacre
 0.5 - 1 L per hectare

Soil Application:

3 - 5 L per ha

Seed Treatment:

2 L per tonne of seed

First Aid & Safety

Safety Directions: Harmful. Danger of serious damage to health by prolonged exposure through inhalation and if swallowed. Harmful to aquatic organisms. Avoid release to the environment (refer to MSDS). When handling, wear suitable protective clothing and face mask.

First Aid: For advice contact a Poisons Information Centre (Ph: 131 126 in Australia) or Ph: +613 9573 3112 (worldwide) or doctor. If swallowed do NOT induce vomiting. If in eyes hold eyelids apart and flush the eye continuously with clean water for at least 15 minutes. If skin and hair contact occurs, remove contaminated clothing and flush skin and hair with copious amounts of water.

Functions of Manganese

- Often called the element of life. It electrically charges the seed, enabling the subsequent magnetic attraction of other elements into the seed.
- Accelerates and improves germination.
- Required for chlorophyll production.
- It is a critical enzyme activator.
- Essential for carbohydrate and nitrogen metabolism.
- Accelerates maturity.
- Participates in the oxygen evolving system of photosynthesis.
- Required for optimal seed formation in all crops.

Miscellaneous

- Use Nutri-Tech Plant Therapy™ to determine mineral requirements.
- Note: Product in 1000 L tanks may weigh over 1 tonne. Forklift with 2 tonne lifting capacity is recommended.

Typical Analysis w/v

Manganese	14.0 %
Iron	3800 mg/L
Zinc	1800 mg/L
Copper	450 mg/L
Boron	750 mg/L
Molybdenum	120 mg/L
Magnesium	630 mg/L
Cobalt	60 mg/L
Silicon	420 mg/L
Calcium	80 mg/L
Sodium	3500 mg/L
Sulphur	5.5%
Potassium (as fulvate)	0.25%
Potassium (as silicate)	0.04%
Total Potassium	0.29%
Total Nitrogen (as organic N)	0.42%
Carbon (as Shuttle Chelate)	4.76%
pH	4.5 - 6.5
Conductivity	11 - 17 mS/cm
Specific gravity	1.4
Solubility	100 %
Appearance:	Brown liquid

Storage & Handling

- Compatibility and/or performance cannot be guaranteed when combined with other products. Jar test for compatibility and spray test on small area before wide-spread use. When combining with other chemicals, add this product to the tank last.
- Store in cool dry area out of direct sunlight. This product has been tested to store safely down to 5°C. Crystallisation or sedimentation may occur below 5°C.
- Shake concentrate thoroughly before adding to partially filled tank.
- Shake or stir before use, especially when near empty to dissolve the residue on the bottom of the drum/bottle.
- Do not pre-mix or store in diluted form, and use promptly once opened.
- All foliar sprays perform best when applied early morning or late afternoon.
- WARNING: Avoid spraying close to harvest if fruit/vegetables are susceptible to staining.

Disclaimer: Any recommendations provided by Nutri-Tech Solutions Pty Ltd (NTS) or its Distributors are advice only. As no control can be exercised over storage, handling, mixing application or use, or weather, plant or soil conditions before, during or after application (all of which may affect the performance of our program), no responsibility for, or liability for any failure in performance, losses, damages, or injuries (consequential or otherwise), arising from such storage, mixing, application, or use will be accepted under any circumstances whatsoever. NTS recommend you contact an Agronomist prior to product application. The buyer assumes all responsibility for the use of any NTS products.



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