
RAPID SODIUM DISPLACEMENT

*Liquid nutrition at its best*

NUTURF®
SPECIALISTS PROVIDING SOLUTIONS

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# FoliMAX Cal-Mag 13% Ca, 3.4% Mg, 11% N

## Sodium displacement agent for soil and plant.

*Liquid nutrition at its best*

### FoliMAX Cal-Mag

FoliMAX Cal-Mag is a liquid sodium fighter containing 13% calcium and 3.4% magnesium in a very soluble nitrate form for rapid flushing of sodium from the root-zone. With an ideal calcium to magnesium ratio, FoliMAX Cal-Mag can also be used in a maintenance program for prevention of calcium and magnesium deficiencies within the turfgrass.

### The FoliMAX Cal-Mag guaranteed minimum analysis:

**Nitrogen (N) as Nitrate:** 11.2%

**Calcium (Ca) as Nitrate:** 13%

**Magnesium (Mg) as Nitrate:** 3.4%

**Boron (B) as borate:** 0.1%

### The FoliMAX Cal-Mag product characteristics:

**pH:** 4.0 – 6.0

**Specific Gravity:** 1.48

**Appearance:** Clear liquid

**Solubility:** Very soluble

### Key benefits of FoliMAX Cal-Mag

- Highly soluble forms of calcium and magnesium for quick and effective flushing of sodium.
- Chloride and sulphate free formulation
- Ideal ratio of calcium to magnesium (4:1), for routine maintenance applications.
- Useful formulation for injection into irrigation systems with light water.
- Can be used in fertigation systems.
- Flexible application rates to modify the nitrogen output.
- Free flowing formulation, making it easier to decant into spray equipment and mixing tanks.
- Boron in the formulation aids in maximising calcium uptake within the plant.
- Manufactured in Australia.

### Sodium impact on the soil profile

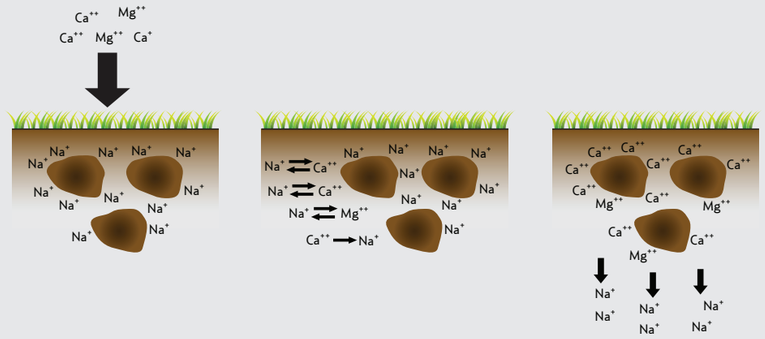
Sodium has a significant impact on soil conditions and turfgrass health. The primary problem posed by high sodium is a rapid decline in soil structure that can begin when sodium base saturation exceeds the critical 3% level. High sodium reduces soil permeability, resulting in drainage and compaction problems that cause a decline in turf vigour.

### Sodium displacement

The principal of Cation Exchange Capacity (CEC) is the exchanging of one cation for another that has a higher preference or charge. As sodium is a single charged cation it can be removed by a divalent cation with a higher molecular weight.

| Nutrient | Molecular weight | Valence (No. of charges) |
|---|---|---|
| Calcium | 40 | 2 |
| Magnesium | 24 | 2 |
| Sodium | 23 | 1 |

The most effective cations for displacing sodium are calcium and magnesium (due to their molecular weight and valence). Sodium is attracted to the negatively charged sites on soil colloids. As these levels rise with persistent input, usually due to high levels in irrigation water, binding of other cations into exchange sites can become restricted. Sodium at high concentrations itself can be toxic to turfgrass and with increased accumulation, can cause a number of deleterious effects to both turfgrass soils and plant vigour. To offset sodium, high concentrations of soluble calcium and magnesium must flood the exchange sites which forces the sodium off these exchange sites and is then removed from the root-zone by irrigation or rainfall.




### Solubility of calcium and magnesium nitrate in FoliMAX Cal-Mag

The below table highlights the solubility of several soil amendments. The higher the number, the greater the solubility of the product in water. The table clearly shows that calcium nitrate is the most soluble form of calcium, ensuring its ability to quickly enter the soil environment and flush sodium off exchange sites. Likewise of the magnesium sources, magnesium nitrate is the most soluble form, again ensuring maximum ability to flush sodium from the profile.

### SOLUBILITY OF SEVERAL SOIL AMENDMENTS

| | Solubility – g/100g | | | | |
|---|---|---|---|---|---|
| **Source** | **0°C** | **10°C** | **20°C** | **30°C** | **40°C** |
| Calcium Nitrate | 102 | 115 | 129 | 152 | 191 |
| Calcium Sulphate (Gypsum) | 0.223 | 0.244 | 0.255 | 0.264 | 0.265 |
| Calcium Chloride | 59.5 | 64.7 | 74.5 | 100 | 128 |
| Calcium Carbonate | - | - | 0.0006 | - | - |
| Magnesium Nitrate | 62.1 | 66 | 69.5 | 73.6 | 78.9 |
| Magnesium Sulphate | 22 | 28.2 | 33.7 | 38.9 | 44.5 |
| Magnesium Chloride | 52.9 | 53.6 | 54.6 | 55.8 | 57.5 |

Source: www.wikipedia.com.au

### FoliMAX Cal-Mag APPLICATION INFORMATION

FoliMAX Cal-Mag can be used as a soil drench for sodium flushing or as a foliar application to overcome sodium issues within the plant. Apply as a spray application on all turf grasses and landscape plants in sufficient water to achieve adequate plant coverage. Use a water volume of 5-15L per 100m² (500-1500L/Ha), depending on the application rate. Do not apply when temperature exceeds 26°C and avoid mowing for 24 hours following an application. Always follow up with immediate irrigation to ensure good soil penetration and eliminate any chance of leaf burn. If the soil profile is dry or the turf / landscape plant is under heat or drought stress, it is recommended to irrigate prior to, and then after application to obtain the best results.

| Situation | Rate | Comments |
|---|---|---|
| Soil application | 20 – 40L/ha<br>200 – 400mL/100m² | Apply in a minimum of 500L of water per hectare and irrigate following application with 3-6mm of irrigation. Repeat every 14-30 days during the active growing season. |
| Foliar application | 10 – 20L/ha<br>100 – 200mL/100m² | Apply in a minimum of 500L of water per hectare. Repeat every 14-30 days during the active growing season. |
| Landscape plants and ornamentals | 150mL/100m² | Repeat the application every 30 days or as required. |

### MIXING PROCEDURE AND COMPATIBILITY WITH FoliMAX Cal-Mag

Fill spray vessel with half the required volume of water. Shake container of FoliMAX Cal-Mag and add required amount to spray tank while agitating. Add remaining water to the spray tank. Continue agitating during application. Wash out spray tank, including nozzles, immediately after use.

### OTHER KEY PRODUCTS IN THE FoliMAX RANGE

#### FoliMAX Calcium+

Liquid fertiliser solution containing 15% calcium with Nutrex Delivery Technology. The Nutrex delivery system harnesses plant carbohydrates within the solution as a catalyst to optimise nutrient uptake through the foliage, maximising application efficiency. For the prevention and correction of calcium deficiencies.

NUTURF FoliMAX® CALCIUM+ 15% Ca WITH NUTREX DELIVERY TECHNOLOGY

#### FoliMAX Amino+

A unique combination of amino acids derived from enzymatically digested plant protein, Vitamin B1 for improved root growth and disease resistance and plant growth promoters for optimising plant response in times of stress.

NUTURF FoliMAX® AMINO+ AMINO ACIDS, GROWTH PROMOTERS & VITAMIN B1