



EPSO MICROTOP[®]
MAGNESIUM SULPHATE WITH MICRO-NUTRIENTS
15% MgO + 31% SO₃ + 0.9% B + 1% Mn
- E.C. Fertiliser -

1/ PRODUCT DESCRIPTION

Magnesium Oxide (MgO)	15%, water soluble (9% Mg)
Sulphur Trioxide (SO ₃)	31%, water soluble (12% S)
Boron (B)	0.9%, water soluble
Manganese (Mn)	1%, water soluble

2/ CHEMICAL ANALYSIS

	<u>Typical</u>	<u>w</u>
Magnesium Sulphate Heptahydrate (MgSO ₄ ·7H ₂ O), calculated as MgSO ₄)	45.5	%
Water of crystallisation (H ₂ O)	46.5	%
Boric Acid (H ₃ BO ₃)	5.1	%
Manganese Sulphate (MnSO ₄)	2.8	%
K ₂ SO ₄ , CaSO ₄ , KCl, NaCl	0.1	%

3/ GRANULOMETRY

	<u>Typical</u>	<u>w</u>
< 1.0 mm	70	%
d ₅₀ (mm)	0.75	
Bulk density	ca. 1,000 kg/m ³	
Bulk density (packed)	ca. 1,100 kg/m ³	
Angle of repose	ca. 35°	

4/ PHYSICAL PROPERTIES

pH (5% solution): ca. 5 at 25° C.

Solubility in water: w (Magnesium Sulphate with micro-nutrients) = 42.9% at 20° C. (68° F.)

Readily soluble, practically without residues; always vigorously stir the salt into water or solution.

5/ STORAGE

Store at a cool and dry place. Excessive storage pressure and large temperature fluctuations can result in caking, which can be broken up by pounding of the bags.

6/ APPLICATION

Magnesium Sulphate with micronutrients is preferably used as a foliar fertilisation for higher yields and better quality. Magnesium Sulphate with micronutrients eliminates magnesium, sulphur, boron and manganese deficiencies quickly and successfully. When mixed with any plant protection products the recommendations of the plant protection manufacturers have to be followed. Our product is made from crude potassium salt of natural origin and is permitted for use in organic farming according to the Regulations (EC) No 834/2007 and (EC) No 889/2008.

® = Registered trademark of companies of K+S group

The data given above are based on our continuous quality monitoring system. They do not exempt the users from their obligation to make an incoming control of the delivered product. The data are for information purposes only and are not to be taken as a guarantee. It is the responsibility of the users to determine the product's suitability for its intended use.



7/ FOUR IMPORTANT NUTRIENTS

1. Magnesium

- is essential for the yield and quality formation of plants.
- plays a primary role in the photosynthesis as a central atom in the chlorophyll (pigment need for leaf greening).
- is necessary in the energy, protein and carbohydrate metabolism for the incorporation and storing of assimilates.
- deficiency occurs most commonly during the peak crop growing phase as well as in periods of extreme weather (coldness, drought) or alternatively where soil magnesium availability is limited.

2. Sulphur

- is a vital nutrient needed for the protein synthesis of the plants and improves therefore the N use efficiency.
- is absorbed preferably by the plants as sulphate via the roots as well as the leaves.
- gains increasingly in importance as the atmospheric sulphur deposition has clearly been reduced due to air pollution control.

3. Boron

- is important for cell wall formation, water balance as well as synthesis of energy rich assimilates like sugar and starch.
- when applied, has a narrow range of action between overcoming deficiency, optimal supply and toxicity.
Thus it is essential to adjust the application rate accurately to the boron requirement of the crop.
- deficiency symptoms occur often after a period of drought and are expressed mainly through the death of the growing points, deformation and decaying of young leaves, stunted growth, thickened stems, cracked tissues and shortened leaf blades.

4. Manganese

- activates various enzymes and is therefore in many ways relevant for the plants metabolism.
- is needed for the chlorophyll and photosynthesis as well as for the nitrate reduction and amino acid formation.
- improves the disease resistance of plants.
- is less available with increasing soil pH. The manganese fixation is aggravated in situations of droughts and intensive soil aeration.

8/ RECOMMENDATION FOR USE

Microtop:

- is ideal in its composition: It meets the crops magnesium, sulphur, boron and manganese requirements containing 15 % MgO, 12 % S, 1 % B and 1 % Mn
- is top in application : 25 kg/ha Microtop supply the plants via the leaf with 3.75 kg MgO, 3 kg S, 250 g boron and 250 g manganese. The peak requirement of magnesium and sulphur as well as the total maintenance requirement of boron and manganese of the crops is met with one or two applications.
- is top in solubility : It dissolves residue free (no blocked nozzles) and is very plant compatible.
- is top in mixtures with most pesticides and liquid fertilisers: Instructions of respective producers have to be regarded.
- is top delivered in easy to handle 25 kg bags
- is top in handling and storage.
- is top concerning its costs effectiveness : With Microtop you obtain a well-priced nutrient supply of magnesium, sulphur, boron and manganese without additional application costs if the treatment is carried out in combination with the pesticide application.
- Shows a top success concerning the removal of magnesium, sulphur, boron and manganese deficiency symptoms.
- is top as preventive application.

9/ APPLICATION & USE

As a foliar spray for the rapid correction of magnesium, sulphur, boron and manganese deficiencies. Boron sensitive crops should only be treated with Microtop when the boron level of the crop has been determined. When tank-mixing Microtop with other agrochemicals, the respective manufacturers' recommendations must always be followed. We recommend 25 kgs Microtop per ha in 400 ltrs of water. In case of visible deficiency symptoms, repeat the spraying once or twice with the same dosage.

The product is made from naturally occurring crude potassium salt and in accordance with European Commission Regulations EC 2092/91 and 1073/2000 is permitted for use in organic farming.

10/ PACKING

25 kgs net original producer's paper bags on pallets, 24,150 kgs per 20' container (= min. order).