

MIRACLE® SUPER

Product Description

Miracle®Super is a non-ionic surfactant and belongs to the chemical class of organomodified trisiloxanes, which is, polyether trisiloxane. These agricultural adjuvants can produce a phenomenon known as "super spreading" and reduces surface tension. Its has excellent adhesion, retention and penetration. Therefore the biological performance of crop protection products can be significantly enhanced by:

- Superior wetting of hydrophobic surfaces, in particular leaves and other parts of plants at concentrations of 0.1% or less.
- Better uptake through penetration of cuticular waxes, and;
- Stomatal flooding.

Benefits

The outstanding physical chemical properties of Miracle®Super result in unique modes of action which in turn provide benefits to the farmer because

- Miracle® Super allows a larger amount of active ingredient to enter the plant; the active works even under difficult conditions
- Miracle®Super provides rainfastness to agricultural sprays; eg: rain an hour after spraying can be tolerated with no requirement of re-spray
- Miracle®Super permits the reduction of spray volumes by up to 30%; saving time, money and environmental resources.

Physical properties

Viscosity at 25 °C	40 - 90 mPas
Density at 20 °C	1.00 - 1.02 g/ml
Type	100% non-ionic
Flash point	> 100 °C
Pour point	< -10
Surface Tension at 22 °C (0.1%)	approx. 22 mN/m
Appearance	liquid
Colour	colourless to pale straw

Solubility at 10%

Water	soluble
Butanol	soluble
NMP	soluble
Cyclohexanone	soluble
Rapeseed methylester	soluble
Sunflower oil	soluble
Solvesso 150	soluble



without Miracle® Super

with Miracle® Super

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Application

- Miracle[®]Super can be used in tank mix applications as well in formulations.
- For tank mixtures pesticide manufacturers may suggest a rate of a non-ionic surfactant to be used with their product. Follow the corresponding label recommendation.
- However, if the pesticide label does not have a specific recommendation for adjuvant use, but does not prohibit its application, Miracle[®] Super should be applied at rates listed below. Careful observation of spray performance in a trial application with the tank mixture to be sprayed is advised to determine proper and efficient rates.

Microbial compatibility

- Miracle[®]Super is biocompatible with microbial control agents like *Trichoderma spp.*, *Beauveria bassiana*, *Bacillus spp.*.
- Miracle[®]Super is a carrier liquid for microbial formulations, providing excellent shelf life results.
- Miracle[®]Super absorbs and coordinates water and by that it controls the water activity. Water activity is one of the key parameters for microbial shelf life stability.

Storage stability

Miracle[®]Super is stable in sealed containers for 4 years. Miracle[®]Super is not sensitive to freezing.

Dose rates

Arable crops

Pesticides with systemic action: 200ml/ha

- to improve wetting, spreading and uptake.

Pesticides with contact action: 125ml/ha

- to improve wetting and spreading.

Horticultural crops and orchards

200ml - 300ml/ha, depending on the growth stage.

These dosages allow for various water volumes. To be in line with regulatory compliances, please observe the local label for Miracle[®]Super in order to not exceed the maximum recommended concentration.

Listing status

Miracle[®]Super is listed in the following chemical inventories:

EINECS, TSCA, DSL, AICS, ECL, ENCS, IECSC (China), PICCS.

Miracle[®]Super is exempt from the requirement of a tolerance when used in accordance with good agricultural practice as an inert ingredient in pesticide formulations applied to growing crops or to raw agricultural commodities after harvest.

Miracle[®]Super is OMRI (Organic Materials Review Institute) listed.

Packing Size

500ml plastic bottle

50ml plastic bottle

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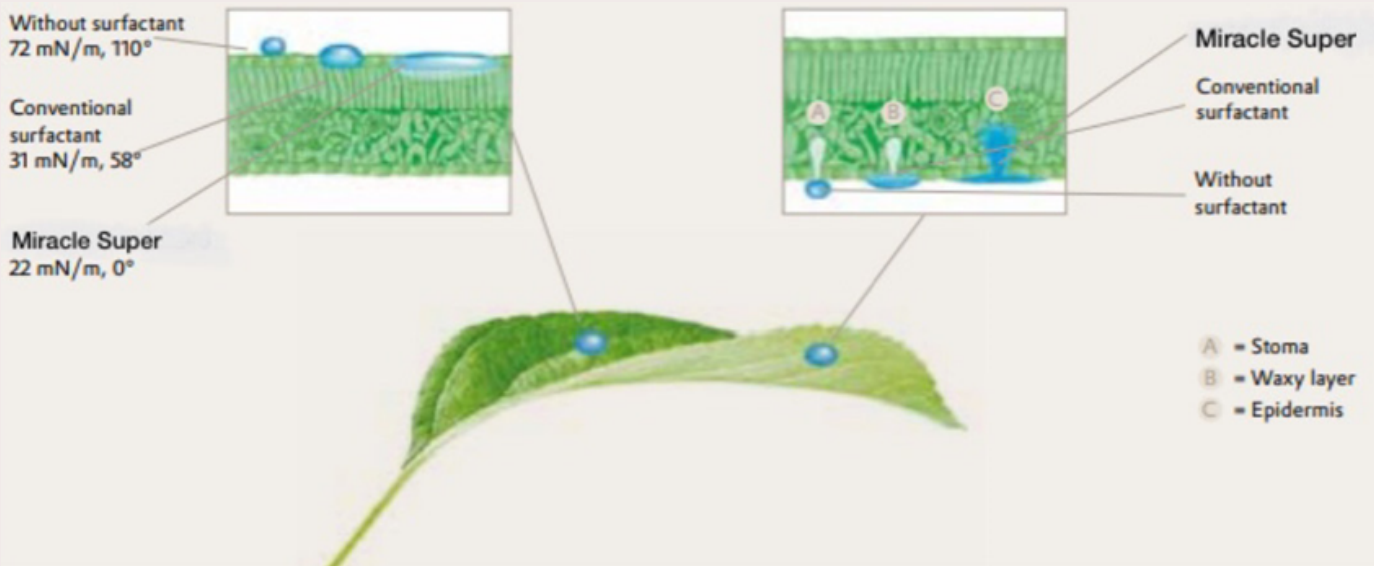
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Hazardous goods classification

Information concerning

- classification and labelling according to regulations for transport and for dangerous substances
- protective measures for storage and handling
- measures in case of accidents and fire
- toxicity and ecological effects are given in our material safety data sheets.



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