



ECOSPREAD®

Super Spreader Surfactant

TECHNICAL NOTES

FEATURES

ECOSPREAD® is a **BioGro®** certified non ionic surfactant from the organomodified trisiloxanes chemical class. These are the only agricultural adjuvants that can produce a phenomenon known as “super spreading” i.e. the rapid coverage of hydrophobic surfaces such as leaves at concentrations of 0.1% or less. Aqueous solutions containing **ECOSPREAD®** have zero contact angle - in contrast to water treated with conventional surfactants such as nonylphenol ethoxylates.



Super Spreading

Super spreading is a consequence of lowering surface tension dramatically i.e. below 25 mN/m.

Hence agricultural sprays containing **ECOSPREAD®** can deliver crop protection products and foliar fertiliser more effectively by:

- complete wetting of treated vegetation (wetting action)
- allowing the spray to reach locations that are conventionally not accessible (targeting effect)
- better uptake through the waxy layer of leaves (cuticular penetration), entering stomata pores (stomatal flooding)



Stomatal Flooding

Stomata are microscopic pores in the leaf's surface that exchange water vapour, oxygen and carbon dioxide with the atmosphere. If spray solutions enter these minute openings, direct access is gained to the plant's intercellular structure. Once inside the sub-stomatal cavity, the active ingredient is quickly absorbed by the spongy mesophyll and translocated throughout the plant, resulting in faster and more positive results.

Cuticular Penetration

The function of waxy cuticle layer is to prevent water loss from the leaf surface. It's impervious nature also inhibits entry of pesticides into the leaf. Silicone surfactants can enhance the passage of pesticides through the cuticle without damaging it.

BENEFITS

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

- ECOSPREAD® allows a larger amount of active ingredient to enter the plant
 - › the active works even under difficult conditions
- ECOSPREAD® provides rainfastness to agricultural sprays
 - › rain an hour after application can be tolerated with no need for re-spray
- ECOSPREAD® permits the reduction of spray volumes by up to 30%
 - › saving time, money and environmental resources

In many field trials on a wide range of crops, independent institutes and extension services have successfully tested ECOSPREAD® with:

- herbicides
- fungicides
- insecticides and acaricides
- plant growth regulators
- micronutrients
- and as a soil wetting agent and dew control agent

ADVANTAGES

ECOSPREAD® safeguards the performance of pesticides and foliar fertilisers under unfavourable conditions:

- By delivering the active even under hot and dry conditions
- When weeds species are mature and hardened
- When crops are covered by dust from the field
- After a cold period when the waxy layer of plants is thicker
- When plants have a limited surface e.g. spikes
- When complete coverage is necessary e.g. rose petals
- It helps dissolve solid formulations e.g. WDG's and WP's

Therefore ECOSPREAD® offers a broad application range. It has no significant influence on spray droplet sizes.

ECOSPREAD® ANALYSIS

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°C
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

STORAGE STABILITY

ECOSPREAD® is stable in sealed containers for 4 years. ECOSPREAD® is not sensitive to freezing.

USE RATES

For tank mixtures, pesticides manufacturers may suggest a rate of a non-ionic surfactant to be used with their product. Follow the corresponding label recommendations. Otherwise **ECOSPREAD®** should be applied at the rates listed.

Product	Crop	Rate ml/100L	Critical Comments
Herbicides		50 -100	Use the low rate for selective herbicides Use a higher rate for non- selective herbicides
Insecticides Fungicides Foliar fertilisers Growth regulators	Row crops Cereal crops Fruit trees Vines Vegetables Ornamentals (except cut flowers)	25 - 75	Use 50 to 75 ml/100 litres and a minimum of 200 ml/Ha in most situations Use a lower rate if excess foaming occurs Use a lower rate if significant run off is observed Use 25 to 35 ml/100 litres when applying in any situation where crop safety concerns may arise such as using products containing copper or sulphur

These dosage rates account for various water volumes in order to minimise the risk of run off. To be in line with regulatory compliances, please observe the local label whether a maximum concentration must not be exceeded. Before the actual spray application with **ECOSPREAD®** with a pesticide or fertiliser, it is recommended to test the tank mix prepared on a small test spot to check for any undesired results.

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