

TECHNICAL DATA SHEET
VERSION OCTOBER 2020

TRANSFORMER[®]

SOIL CONDITIONER

Product Category
Soil conditioner

Use Category
Professional

Registration Number
Refer to the national commercial label

Formulation Type
Soluble concentrate (SL)

Active substance/content
Alcohol Ethoxylate 20% w/w

General information and key benefits

TRANSFORMER[®] is a soil conditioner which modifies soil water relations at a macro and micro-scale. Modifications to soil water relations results in changes to some key soil hydraulic properties such as: infiltration, drainage, hydraulic conductivity, soil water retention and hydrophobicity. By improving these soil properties, water-use can be improved as the applied water is available to the plant and is not lost through run-off, channelling or uneven wetting of the soil profile.

The application of TRANSFORMER allows water to even infiltrate the micro-pores of compacted layers. Thereby the penetration resistance of the compact layer is alleviated, and this will allow root growth.

Mode of action

As it is a blend of surfactants **TRANSFORMER[®]** lowers the surface tension of water allowing changes in the cohesive forces, as well as the adhesive forces between soil and water. The mode of action is ascribed to changes in soil hydraulic properties due to lowering the surface tension of water and consequently also modifying the interaction of water with the soil surface.

Key benefits

- Improved the infiltration rate of water in soil;
- Improves infiltration of water in compacted soils, resulting in lower penetration resistance and less restriction of root growth;
- Improves lateral water distribution in soil;
- Reduces hydrophobicity and improves water retention through better distribution in sandy soils.

TRANSFORMER®

TECHNICAL DATA SHEET | VERSION OCT 2020 |

Mode of application

TRANSFORMER® should ideally be applied through an irrigation system; drip, microsprinkler or overhead irrigation system. However, **TRANSFORMER®** can also be applied onto bare soil pre-planting, at planting or post planting with a boom sprayer.

In loam or sandy soils:

- Apply 5-10 l/ha of **TRANSFORMER®**.
- Start to moisten the soil with water only during the first 25 % of the irrigation process.
- Inject 5-10 litres/ha during the following 50 % of the irrigation process, in order to improve its distribution.
- End the irrigation process with water only to ensure that **TRANSFORMER®** will be adequately washed into the soil.

In heavy soils or when there is a superficial crust:

- Follow the same sequence as in the preceding paragraph with a rate of 10-15 litres/ha at 5 litres/ha applications every 15 days.
- The dilution rate should not exceed more than 1 litre of **TRANSFORMER®** per 1000 litre of water (concentration $\leq 0,1\%$).

Phytotoxicity

No root damage has been observed after treatment with **TRANSFORMER®** – even on seedling roots.

If application of **TRANSFORMER®** is made over plant leaves, the concentration should not be higher than 0,1%.

Classification

- H319 Causes serious eye irritation.
- H412 Harmful to aquatic life with long lasting effects.
- P264 Wash hands thoroughly after handling.
- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P501 Dispose of contents/container to industrial combustion plant.



WARNING

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TECHNICAL DATA SHEET | VERSION OCT 2020 |

Physical and chemical properties

- Physical state: Liquid
- Colour: Light green
- Odour: like citrus
- pH: 7-8 at 20 °C
- Flash point Pensky-Martens: > 90.3°C at 725 mmHg
- Vapour pressure: 186.4 Pa at 25 °C
- Density: 0.995-1.025 g/cm³ at 20 °C
- Relative density: 0.98-1.15 g/cm³ at 20 °C
- Solubility (water): miscible in any proportion
- Viscosity: 100-200 mPa/s at 20 °C

These physical properties are typical values for this product and should not be considered as guarantees of any specific lot.

**Please always refer to the national commercial label for the specific directions for use of TRANSFORMER.
Feel free to contact the local ORO AGRI advisor in your area for more information.**

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