

## Technical Information

**BREAK-THRU® EM V 20****Product description**

BREAK-THRU® EM V 20 is one of our vegetable based non-ionic emulsifiers with excellent ecological, toxicological and dermatological behavior. This surfactant also reduces the surface tension of oils (e. g. sunflower or rapeseed oil) without any foam. It creates emulsion spontaneously in ECs and EWs. During screening of various emulsifiers in pyrethroid EC formulations it demonstrated superior performance. In herbicide field trials this product showed higher biological efficacy than methylated rapeseed oil, even at lower dose rate. No phytotoxicity was exhibited in wheat and maize field trials.

**Physical properties**

HLB (± 1)	8.4
Form (25 °C)	liquid
Appearance (25 °C)	clear
Color value acc. to Hess-Ives	max. 30
Water	max. 1

**Application/Dosage**

BREAK-THRU® EM V 20 is mainly used for the formulation and emulsification of environmentally friendly fluids based on vegetable (e. g. rape seed oil) and synthetic ester oils (e. g. trimethylol propane trioleate), as well as combinations of these oils with mineral oils.

If BREAK-THRU® EM V 20 is used with other emulsifiers e. g. alcohol ethoxylates we recommend a dosage of 3 – 9 %. For a specific oil quality the HLB value can be adjusted by using co-emulsifiers such as TEGIN® O V or TEGO® SMO V.

In the case BREAK-THRU® EM V 20 is used as a sole adjuvant dose rate of about 500 ml/ha are recommended.

**Properties/Benefits**

BREAK-THRU® EM V 20 has excellent emulsifying properties and ensures the spontaneous formation of finely dispersed, stable oil-in-water emulsions (o/w). This allows in general a reduction of the total emulsifier content which is necessary for the fluid emulsification.

Since BREAK-THRU® EM V 20 is an emulsifier based on raw materials derived from vegetable oils, it exhibits benign properties and hence does not carry a risk phrase:

- BREAK-THRU® EM V 20 has good toxicological and ecological properties (water hazard classification = 1)
- BREAK-THRU® EM V 20 does not require any hazardous classification in accordance with EG directives/German regulations on dangerous substances

BREAK-THRU® EM V 20 has good dermatological properties (no skin irritation)

## Listing status

The ingredients of BREAK-THRU® EM V 20 are listed in the following chemical inventories:

EINECS, TSCA, DSL, ENCS, ECL, PICCS and CHINA

Per 40 CFR 180.960, BREAK-THRU® EM V 20 is exempt from the requirement of a tolerance under FFDA section 408, if such use is in accordance with good agricultural or manufacturing practices.

## Storage stability

In original closed containers BREAK-THRU® EM V 20 can be stored at temperatures below 40 °C for at least 1 year.

## Packaging

4 x 200 kg drums (full pallet)

1 000 kg container

## 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

is given in our material safety data sheets.

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