

# Librel<sup>®</sup> Mn

**Manganese EDTA Chelate**

## Product Information

<b>Product Type</b>	Micronutrient fertiliser conforming to the definition of an "EC FERTILISER".
<b>Description</b>	Manganese ethylenediamine tetraacetate disodium salt, (MnEDTA Na <sub>2</sub> )
<b>Intended Use</b>	<ul style="list-style-type: none"><li>• To correct manganese deficiency in most agricultural, horticultural and ornamental crops. Recommended for foliar application.</li><li>• As a micronutrient source in hydroponics, liquid feed solutions and soilless growing media.</li></ul>
<b>Typical Analysis</b>	Manganese (as Mn) 13.0% w/w
<b>Analytical Method</b>	Available on request
<b>Appearance</b>	White spray agglomerated microgranule
<b>PRD-No.</b>	30482179
<b>Solubility (in water)</b>	~300 g/l (at 20 °C)
<b>Specification</b>	See separate document: "Standard Specification" available via BASF's WorldAccount: <a href="https://worldaccount.basf.com">https://worldaccount.basf.com</a> (registered access).
<b>Packaging</b>	Detailed information on the packaging is available via BASF's WorldAccount: <a href="https://www.worldaccount.basf.com">https://www.worldaccount.basf.com</a> (registered access).
<b>Storage</b>	Librel Mn will store indefinitely under normal conditions. For user convenience it is recommended that the product is stored in a dry place. Re-seal partly used packs tightly.
<b>Transport Precautions</b>	No special precautions are necessary for transport by air, sea, rail or road.
<b>Harmonised Tariff No.</b>	2922-4985-90
<b>Health &amp; Safety</b>	Detailed information on the product described in this leaflet can be found in our relevant Health and Safety Information (Material Safety Data Sheet) available via BASF's WorldAccount: <a href="https://worldaccount.basf.com">https://worldaccount.basf.com</a> (registered access).
<b>Directions for Use</b>	
<b>General Information</b>	Librel Mn gives best results when crops have adequate supplies of water and major nutrients and are not under stress for any other reason. Conditions that are responsible for one particular deficiency can also induce deficiencies of other micronutrients. Always ensure that deficiencies are confirmed before treatment is carried out.
<b>Mixing With Water</b>	Simply add the powder to water while it is being agitated, do not pre-mix. Continue agitation for a short while to ensure complete dissolution.
<b>Compatibility</b>	Librel Mn is compatible with all other Librel chelates and many crop care chemicals. It is also fully compatible with solutions containing soluble phosphates such as liquid feeds and foliar fertilisers.

## Foliar Application

### General Information

Librel Mn should be dissolved in a convenient volume of water to suit the spraying machine being used and the target crop leaf area. The following points should be observed.

1. The sprayer should be fitted with nozzles that produce a fine mist.
2. Only sufficient spray solution should be applied to coat the leaves and stems with a film of moisture with little or no “run off”.
3. Spraying should be carried out on a calm day **but not during strong sunshine or high temperatures**. The best time is late afternoon or evening.
4. If rain is imminent, spraying should be postponed. If rain falls within 4 hours of spraying, the crop should be re-sprayed 3 or 4 days later.

### Fruit Crops

Do not exceed a solution of 0.1% (1g/l) for any one or combination of Librel chelates. Some fruit varieties and cultivars can exhibit unpredictable sensitivity to EDTA chelates. Where local experience of successful use is not available, we strongly recommend small-scale test applications before wide spread use.

### Rates of Use and Timing

Librel Mn may be applied in one application of 2.0 kilograms per hectare but optimum results can be expected if repeat applications are used. In general foliar applications should be started early in the season as soon as there is sufficient leaf area to absorb the spray.

Crop	Rates of Use (kg/ha)	Timing
Winter cereals	1.0	Apply when spring regrowth commences. For severe deficiency an additional full rate application soon after tillering (ZCK 23).
Spring cereals	1.0	Apply as soon as there is sufficient leaf area to absorb the spray.
Sugar beet	0.5	With repeat dose herbicide programmes apply with each application.
	1.0	Conventional application as soon as there is sufficient leaf area to absorb the spray
Potatoes	1.0	At tuber initiation or before the tops meet the rows.
	0.5	Applied with each routine blight spray.
	1.0	Apply just before or at flowering, and repeat if necessary 10 – 14 days later.
Top and soft fruit	0.5	Begin application in early spring and repeat as necessary throughout the season
Pasture	1.0	Apply in early spring, the treatment should be repeated annually.

### Water Volume

The amount of Librel Mn to be applied should be mixed with a volume of water appropriate to the crop leaf area of the type of spraying machine being used.

Arable crops: 200 – 600 litres per hectare.

Fruit crops: 500 – 1000 litres per hectare.

NB: Do not exceed a solution concentration of 0.1% (1 g/l).

### Wetting Agent

Unless Librel Mn is to be applied with a pesticide containing sufficient wetter, then a standard, agricultural non-ionic wetting agent should be used as recommended by the manufacturer.

### Small Scale Use

For example using a knapsack sprayer. Prepare a 0.05 – 0.1% (0.5 – 1.0 g/l) solution and apply so as to coat the leaves and stems with a thin film of moisture with little or no run-off.

**Soil Application**

Please contact your supplier for appropriate recommendations.

**Hydroponic Application****Rates of Use**

1 ppm (18.18 µmol/l) manganese can be achieved by adding 7.7 grams of Librel Mn per 1000 litres of solution.

**Statutory Caution**

To be used only where there is a recognised need. Do not exceed the appropriate dose rate.

**Note**

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