

MANGANESE 5% **GLUCOHEPTONATE** *with* **2% SULFUR**



GROWTH[®]
PRODUCTS

THE LIQUID SOLUTIONS COMPANY

**PROFESSIONAL
LIQUID
MICRONUTRIENTS**

**Foliar and Root Absorption
Corrects Deficiencies**

Net Wt. 26 lbs. (12.4 kg)

Shake Well Before Using

2 1/2 Gallons (10 Liters)

P-3-LBL-MANFB-001-UNIV-03122021

MANGANESE 5%

F106



OPEN
Resealable Label
for Directions &
Precautions

GUARANTEED ANALYSIS:

Manganese (Mn)5%
5% Water Soluble Manganese (Mn)	
Sulfur (S)2%
2% Combined Sulfur (S)	

Derived From: Manganese Sulfate, Manganese Glucoheptonate.

PRODUCT SPECIFICATIONS:

Weight per gallon10.41 lb.
Weight per Liter1.24 Kg
Each gallon contains0.52 lbs Mn

PRODUCT DESCRIPTION:

Manganese 5% is ideal for both soil and foliar uptake. Mn is available for microbial activity in the soil. Manganese 5% is ideal for mixing with pH acid sensitive products. It is not affected by soil conditions, other nutrients or technical grade materials. Manganese 5% will remain in a soluble form for plant uptake since it remains as a negative charge ion and is not attracted to negatively charged soil particles.

Mixing: Manganese 5% is not compatible with phosphate fertilizers, and must be mixed and applied separately.

FIRST AID	
IF SWALLOWED:	Call a poison center or doctor if you feel unwell: Rinse mouth.
IF IN EYES:	Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.
IF ON SKIN:	Remove contaminated clothing and wash skin with plenty of soap and water. If skin irritation occurs, get medical advice/attention.
IF INHALED:	Call a poison center or doctor if you feel unwell.
You may also contact 1-800-992-5994 day or night for emergency treatment information. If medical advice is needed, have product container or label at hand (P101), Keep out of reach of children (P102), Read label before use (P103).	
STORAGE: Keep container tightly closed. May be stored in unheated area, but keep from freezing. Store in areas inaccessible to children and pets.	
DISPOSAL: Dispose of contents/container in accordance with local/regional/national/international regulations. Do not reuse container.	

The following precautionary statements and pictograms are based on The Globally Harmonized System of Classifications and Labeling of Chemicals (GHS) and are mandated by the Occupational Safety and Health Administration (OSHA)




WARNING

H335 May Cause Respiratory Irritation
H413 May Cause Long Lasting Harmful Effects to Aquatic Life

Another quality product from: Growth Products, Ltd.

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Questions? Call (800) 648-7626

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questions@growthproducts.com

Condition of Sale and Warranty: Growth Products, Ltd warrants that the product conforms to its chemical description and is reasonably fit for the purpose stated on the label only when used in accordance with label directions under normal conditions of use. Handling, storage and use of the product by Buyer or User are beyond the control of Growth Products and Seller. Risks such as crop injury or other unintended consequences resulting from, but not limited to, weather or soil conditions, presence of other materials, disease, pests, drift to other crops or property, or failure to follow label directions will be assumed by Buyer or User. IN NO CASE WILL GROWTH PRODUCTS, LTD OR SELLER BE HELD LIABLE FOR CONSEQUENTIAL, SPECIAL, OR INDIRECT DAMAGES RESULTING FROM THE HANDLING, STORAGE OR USE OF THIS PRODUCT

MANGANESE DEFICIENCIES:

Manganese plays an important role in enzyme formation in plant cells, and carbon dioxide assimilation. Manganese deficiencies will often occur in water bogged soils and low temperatures. Inadequate amounts of manganese in soil will result in interveinal chlorosis first in older leaves. Continued deficiency will also affect younger leaves, followed by formation of lesions.

Foliar Turf Applications		
Application	Rate / 1,000 Square Feet (100 m2)	Frequency
All Types of Cool Season and Warm Season Grasses	2 - 4 oz. (127 - 159 ml)	Apply 4 to 6 times during growing season or as needed to maintain color
Bermudagrass	4 - 6 oz (159-177 ml)	

Greenhouse & Nursery Injection Ratio At 1:100 Ratio	
100 PPM Mn	19 oz. per gallon water (150 ml per liter water)

Landscape Plantings, Trees, Shrubs & Ornamentals	
Foliar Spray:	1-2 quarts in 100 gallons of water (250-500 ml in 100 L)
Soil Drench:	2 - 3 ounces per gallon of water. Thoroughly drench soil around area (59 - 88 ml per 4 L water)

Manganese 5% PPM Rates				
Fluid Oz. of Manganese 5% per Gallon of Stock Tank Water				
PPM Manganese	25	50	75	100
1:500	26	52	78	104
1:300	16	31	47	62
1:200	10	21	31	42
1:100	5	10	16	21
1:50	3	5	8	10
1:15 Ratio for Hozon Proportioner				
1:15	0.78	1.56	2.33	3.11

Nursery Programs

Application	Rate	Notes
Nurseries: Containerized Crops, Woody Ornamentals, Foliage Plants, Trees	1-2 quarts per 100 gallons of water (60-125 ml in 100 L water)	Thoroughly spray to point of run-off
Hand Watering	1- 1.25 tsp per gallon of water (2 ml per liter water)	Saturate soil
Palms	Spray 1 qt per 100 gal water (250 ml per 100 L water)	Spray on leaves to run-off

Crop Programs

Plant / Crop:	Application Rate per Acre
Berries	Use 1-2 quarts per acre. Thoroughly wet leaves to run off. (2 - 5 liters per hectare)
Citrus Trees:	Use 1-2 quarts per acre. Thoroughly wet leaves to run off. (2 - 5 liters per hectare)
Fertigation:	Apply 1 - 2 quarts per acre via drip tape or low volume irrigation. (2 - 5 liters per hectare)
Tomatoes, Small Fruit, Grapes and Vegetables	Use 1-2 quarts in a minimum of 50 gallons of water with ground spray equipment. Apply at least 6 times per season to correct minor nutrient deficiencies. Wet leaves to run off. (2- 5 L per 200 L water)
Greenhouse & Shadehouse:	Apply 1-2 quarts per 100 gal water as a foliar spray. Repeat every 1-2 months or as needed. (250 - 500 ml per 100 liters water)
Liners and Plugs:	Apply 8 oz - 1 qt per 100 gallons water as foliar spray. (63 - 250 ml per 100 liters water)
Nut Trees	Use 1-2 quarts per acre. Thoroughly wet leaves to run off. (2 - 5 liters per hectare)
Tropical Fruits	Use 1-2 quarts per acre. Thoroughly wet leaves to run off. (2 - 5 liters per hectare)

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