



KRAFT LIGNOSULFONATE COMPLEXED 6% MANGANESE

For the Correction of Sulfur and Manganese Deficiencies in Fruit, Nut, Row, Vegetable, Field and Ornamental Crops

GUARANTEED ANALYSIS

Sulfur (S) 4.38%
Manganese (Mn) 6.00%

DERIVED FROM: Manganese Sulfate complexed with Lignosulfonate.

KEEP OUT OF REACH OF CHILDREN



WARNING

Harmful if inhaled.

PRECAUTIONARY STATEMENTS

Avoid breathing vapors. Use only outdoors or in a well-ventilated area.

FIRST AID

In all cases, call a poison control center or doctor for further treatment advice. **IF INHALED:** Remove person to fresh air and keep comfortable for breathing. Call a poison control center or doctor if you feel unwell.

For chemical spills, leaks, fire or exposure, call CHEMTREC: (800) 424-9300.

STORAGE AND DISPOSAL

Store in a safe manner. Store in original container only and keep tightly sealed when not in use. Store product and dispose of unused product and empty containers in accordance with federal, state and local regulations.

GENERAL INFORMATION

RNA KRAFT 6% MANGANESE is formulated using a highly refined or sulfonated lignosulfonate that has high complexing abilities. The product does not settle-out, produces no phytotoxic symptoms to plants and is highly effective for the prevention and correction of manganese deficiency when used at labeled rates. The degree of sulfonation is 7.5, and the medium molecular weight is 1,000. This small molecule allows for rapid absorption of the micronutrient through leaves, new woody stems, bud scales, and non-woody stems. Foliar application is preferred over soil application. **RNA KRAFT 6% MANGANESE** is designed primarily for foliar applications to prevent or correct micronutrient deficiencies in a wide range of agronomic and ornamental plants. Its use is suggested as a supplement to a regular, balanced fertilizer program to enhance yields and improve quality. Application of **RNA KRAFT 6% MANGANESE** is a means of obtaining a quick response to needed elements. Foliar applications of **RNA KRAFT 6% MANGANESE** may be particularly beneficial during periods of peak nutrient demand, for crops grown on soils having poor nutrient availability or to crops suffering from a weakened root system. **RNA KRAFT 6% MANGANESE** should be used as part of a comprehensive Total Nutrition System[®] for optimizing plant growth, development, yield and quality.

DIRECTIONS FOR USE

RNA KRAFT 6% MANGANESE is recommended for application to the following crops and most other vegetables, field, row, nut, and fruit crops:

Alfalfa	Broccoli	Curcubits	Nursery Stock	Peppers	Strawberries
Almonds	Brussels Sprouts	Figs	Oats	Pineapples	Sugar Beets
Apples	Carrots	Garlic	Olives	Pistachios	Sugar Cane
Apricots	Celery	Grapes	Onions	Plums	Sweet Corn
Artichokes	Cherries	Grasses	Ornamentals	Pomegranates	Tomatoes
Asparagus	Citrus	Hops	Pasture/Range Grasses	Potatoes	Turfgresses
Avocado	Cole Crops	Lettuce	Peaches	Prunes	Walnuts
Barley	Corn	Melons	Peanuts	Rice	Watermelon
Beans (all)	Cotton	Milo	Pears	Safflower	Wheat
Boysenberries	Cranberries	Mint	Peas	Soybeans	
Brassicac	Cucumbers	Nectarines	Pecans	Spinach	

GENERAL APPLICATION RECOMMENDATIONS FOR TREE FRUIT AND NUT CROPS

PRE-BLOOM FOLIAR APPLICATIONS: Application by Ground: **RNA KRAFT 6% MANGANESE** may be applied with oil dormant/delayed dormant or with existing crop protection program up to 5% bloom at 2-6 quarts per acre with sufficient water for thorough coverage. **Application by Air:** **RNA KRAFT 6% MANGANESE** may be applied with oil dormant/delayed dormant or with crop protection program up to 5% bloom at 2-6 quarts per acre with sufficient water for thorough coverage. **Caution:** Do not apply more than 1 pint of **RNA KRAFT 6% MANGANESE** per gallon of water by air or ground. The rate per acre depends upon the size of the tree and degree of deficiency.

POST-BLOOM COVER SPRAY APPLICATIONS (By Ground or Air): Apply 1-4 quarts per acre with sufficient water for thorough coverage with existing cover spray program. **Caution:** Do not apply more than 1 pint of **RNA KRAFT 6% MANGANESE** per gallon of water by air or ground. **POST-HARVEST AND BEFORE LEAF DROP APPLICATIONS (By Ground or Air):** Apply 2-6 quarts per acre with sufficient water for thorough coverage with existing cover spray program. Repeat applications as required. Correction may not be evident until next growing season.

SOIL APPLICATIONS: Foliar applications of **RNA KRAFT 6% MANGANESE** are preferred over soil applications. Apply 1-1.5 quarts per tree with pesticide, fertilizer, or irrigation water (overhead, drip or emitter) during active growing season. Correction may not be evident for several months.

SPECIFIC APPLICATION RECOMMENDATIONS FOR TREE FRUIT AND NUT CROPS

ALMONDS: Pre-Bloom Foliar Applications (By Ground or Air): **RNA KRAFT 6% MANGANESE** may be applied with oil dormant/delayed dormant up to 50% bloom at 2-6 quarts per acre with sufficient water for thorough coverage. Preferred timing of application is from delayed dormant to pink bud. For post-bloom, post-harvest, and soil applications, consult general recommendations.

APPLES AND PEARS: Pre-Bloom Foliar Applications (By Ground or Air): **RNA KRAFT 6% MANGANESE** may be applied with oil dormant/delayed dormant up to pink bud and white bud at 2-6 quarts per acre with sufficient water for thorough coverage. Preferred timing of application is from delayed dormant to red bud and white bud. **Post-Bloom Cover Spray Applications (By Ground or Air):** Apply 1-4 quarts per acre with sufficient water for thorough coverage with existing cover spray program. For post-harvest and soil applications, consult general application recommendations.

PLUMS: Pre-Bloom Foliar Applications (By Ground or Air): Apply 2-4 quarts per acre with sufficient water for thorough coverage with oil dormant or delayed dormant up to green cluster with existing crop

Information regarding the contents and levels of metals in this product is available on the Internet at <http://www.aapfco.org/metals.html>

protection program. Preferred timing of application is from delayed dormant to green cluster. Application later than green cluster at high rates could cause damage to susceptible varieties. **Post-Harvest Applications:** Post-harvest applications should not exceed 1 quart per 100 gallons of water. Consult general application recommendations for soil applications.

CITRUS: Pre-Bloom Foliar Applications (By Ground or Air): Apply up to 2-8 quarts per acre with sufficient water for thorough coverage with existing cover spray program prior to bloom. Continue applications as required at 2-6 quarts per acre with sufficient water for thorough coverage with existing spray program. For soil applications, consult general application recommendations.

GRAPES: Pre-Bloom Foliar Applications: Apply up to 2-4 quarts per acre with sufficient water for thorough coverage from bud swell up to 5% bloom with existing crop protection spray program. **Post-Bloom Cover Sprays:** Apply 2-4 quarts per acre with sufficient water for thorough coverage with existing cover spray as required. **Soil Applications:** Apply 1-4 gallons per acre in early spring with fertilizer, pesticide, or irrigation water (overhead, drip or emitter). **Table Grapes:** Do not apply **RNA KRAFT 6% MANGANESE** post-bloom due to possible fruit injury.

GENERAL RECOMMENDATIONS FOR ROW, FIELD AND VEGETABLE CROPS

Application of **RNA KRAFT 6% MANGANESE** is preferred early in plant's development. Those crops that are susceptible to iron deficiency may require a continuous supply of iron applied at low rates either foliar or soil applied. Foliar applications are better than soil applications of **RNA KRAFT 6% MANGANESE**. Split applications are more beneficial than a single application (50% early in the plant's development and 50% prior to flowering or pollination). **Foliar:** Apply 1-4 quarts per acre with sufficient water for thorough coverage with existing crop protection program or overhead irrigation. Apply as required. Split applications are preferred over a single application. **Caution:** Do not apply more than 1 pint of **RNA KRAFT 6% MANGANESE** per 1 gallon of water. **Soil:** Apply 1-3 gallons per acre with fertilizer or pesticide preplant, at planting, or post-emergence broadcast, shanked, or layby.

BEANS (ALL): Foliar: Apply 1-4 quarts per acre with sufficient water for thorough coverage with existing crop protection program. Preferred applications prior to fourth trifoliolate and/or before first bloom on indeterminate or determinate beans. **Soil:** Consult general recommendations.

FIELD AND SWEET CORN: Foliar: Apply 1-6 quarts per acre with sufficient amount of water for thorough coverage with existing crop protection program. Preferred applications are soon after emergence and/or prior to pollination with overhead irrigation or existing crop protection program. **Soil:** Consult general recommendations.

COTTON: Foliar: Apply 1-4 quarts per acre with sufficient amount of water for thorough coverage with crop protection program early after emergence. Repeat application as required. **Soil:** Consult general recommendations.

POTATOES: Foliar: Apply 1-4 quarts per acre with sufficient water for thorough coverage with existing crop protection program shortly after emergence and/or up to 100% bloom with current crop protection program or overhead irrigation water. Repeat application post-bloom as required. **Soil:** Consult general recommendations.

RICE: Foliar: Apply 1-2 quarts per acre with sufficient water for thorough coverage. Apply post-emergence on drained field or after emergence out of the water with current crop protection program. Repeat application as required. **Soil:** Apply broadcast, banded, or shanked with fertilizer or preplant fertilizer at 1-3 gallons per acre.

SMALL GRAINS: Foliar: Apply 1-2 quarts per acre with sufficient amount of water for thorough coverage with existing crop protection program soon after emergence. Repeat application if required. **Soil:** Apply 1-2 gallons per acre with current preplant or at planting fertilizer or crop protection treatment.

GREENHOUSE OR FIELD GROWN ORNAMENTALS AND FLOWERS: Foliar: RNA KRAFT 6% MANGANESE is not recommended to be applied as a foliar treatment to greenhouse or field grown ornamentals and flowers. **Soil:** Apply 2-3 ounces per 100 square feet with current preplant or at planting fertilizer or crop protection treatment.

TURFGRESS: Foliar: Apply 1-2 quarts per acre with sufficient water for thorough coverage with existing crop protection program or current irrigation soon after emergence. Repeat application if required. **Soil:** Apply 1-3 gallons per acre with current preplant or at planting fertilizer or crop protection program.

TOMATOES: Foliar: Apply 1-4 quarts per acre with sufficient amount of water for thorough coverage with existing crop protection program soon after emergence or transplant and/or prior to first and second major blooms with current crop protection treatment. **Soil:** Consult general recommendations.

COMPATIBILITY

FERTILIZER COMPATIBILITY: **RNA KRAFT 6% MANGANESE** is compatible with phosphoric acid, sulfuric acid, and combinations of urea and acids. **RNA KRAFT 6% MANGANESE** is compatible with most neutral pH liquid fertilizer solutions including 28% nitrogen, 32% nitrogen, ammonium nitrate solutions, and urea solutions. **RNA KRAFT 6% MANGANESE** is not compatible with neutral pH phosphate compounds such as 10-34-0 or 11-37-0.

PESTICIDE COMPATIBILITY: **RNA KRAFT 6% MANGANESE** is compatible with most pesticides including insecticides, herbicides, fungicides, acaricides, and other foliar nutrients. **RNA KRAFT 6% MANGANESE** may not be incorporated into an existing aerial, concentrate, or dilute applied crop protection programs. Please add **RNA KRAFT 6% MANGANESE** before adding the pesticide to the spray solution. Before field use, test compatibility by combining in a jar.

Conditions of Sale and Limitation of Warranty and Liability:

NOTICE: Read the entire Directions for Use and Conditions of Sale and Limitation of Warranty and Liability before buying or using this product. If the terms are not acceptable, return the product at once, unopened, and the purchase price will be refunded.

The Directions for Use of the product should be followed carefully. It is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness, or other unintended consequences may result because of many different factors including, without limitation, manner of use or application, weather, combination with other products, or crop conditions. All such risks shall be assumed by Buyer and User, and Buyer and User agree to hold Manufacturer and Seller harmless from any claims relating to such factors. Seller warrants that this product conforms to the chemical description on the label. **EXCEPT FOR THIS WARRANTY, THE PRODUCT IS FURNISHED "AS-IS" AND NEITHER SELLER NOR MANUFACTURER MAKES ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE SELECTION, PURCHASE OR USE OF THIS PRODUCT; SELLER AND MANUFACTURER SPECIFICALLY DISCLAIM ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** Buyer and User accept all risks arising from any use of this product, including without limitation uses contrary to label instructions, under abnormal conditions, or under conditions not reasonably foreseeable to (or beyond the control of) Seller or Manufacturer.

To the extent permitted by law, neither Manufacturer nor Seller shall be liable for any incidental, consequential or special damages resulting from the use or handling of this product. THE EXCLUSIVE REMEDY OF THE BUYER OR USER, AND THE EXCLUSIVE LIABILITY OF MANUFACTURER AND SELLER, FOR ANY AND ALL CLAIMS, LOSSES, INJURIES OR DAMAGES (INCLUDING CLAIMS BASED ON BREACH OF WARRANTY, CONTRACT, NEGLIGENCE, TORT, STRICT LIABILITY OR OTHERWISE) RESULTING FROM THE USE OR HANDLING OF THIS PRODUCT, SHALL BE THE RETURN OF THE PURCHASE PRICE OF THIS PRODUCT, OR, AT THE ELECTION OF MANUFACTURER OR SELLER, THE REPLACEMENT OF THE PRODUCT.

These Conditions of Sale and Limitation of Warranty and Liability shall be interpreted in accordance with the laws of the State of California, excluding its conflicts of laws rules, and may not be amended by any oral or written agreement. K-051117

Manufactured by: RNA

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NET CONTENTS: [] GALLONS/Liters • WEIGHT PER GALLON: 10.48 POUNDS at 68°F