



NORTH METAL & CHEMICAL COMPANY

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Web: www.nmc-nic.com

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email: north@nmc-nic.com

Technical Services Bulletin

Molybdenum in Seed Treating and Agriculture

Application and Dosage:

Molybdenum is an essential trace element for enzymes which fix nitrogen in leguminous crops. Sodium molybdate is used as a soil additive in areas where natural molybdenum is deficient and plant growth suffers. It is usually applied as part of fertilizer or seed treatments. About 0.25 kg molybdenum per acre (0.62 kg/ha) may be used.

The University of Tennessee recommends a dosage of 0.5 oz. actual (active) elemental molybdenum per bushel of seed. Since molybdenum is not a pesticide, its use does not fall under the F.I.F.R.A. law and thus there is no "legal" dosage as such. For instance, the University of Arkansas recommends 1/5 to 2/5 oz. per acre (bushel). Generally, most university crop specialists recommend between 0.2 and 0.5 oz. actual (active) molybdenum per bushel of seed.

Sodium molybdate dihydrate is a white crystal material that is the sodium salt of molybdenum and contains a minimum of 39.65% (by weight) of elemental molybdenum (Mo). Converted, this means that each pound of sodium molybdate dihydrate has 6.344 oz. of actual elemental Mo. Example dosage rates at .5 oz. per bushel follow:

Dosage using Sodium Molybdate Dihydrate:

1 lb. sodium molybdate dihydrate contains 6.372 oz. of active molybdenum (*anhydrous contains 7.44 oz active Mo*). Therefore, 1lb. dihydrate will treat 12.69 bushels of seed at .5 oz/bushel dosage rate or one 250lb. drum of dihydrate treats 3,172 bushels of seed at .5 oz per bushel dosage rate.

Dosage using Sodium Molybdate Solution:

1 lb. sodium molybdate solution 35% contains 2.624 oz. of active molybdenum. Therefore, 1lb. solution 35% will treat 5.25 bushels of seed at .5 oz/bushel dosage rate or one 630lb. drum of sodium molybdate solution 35% treats 3,306.24 bushels of seed at .5oz/bushel dosage rate.

Molybdate Solution Mixing Ratio:

Ratio: 4.7 lbs. Sodium molybdate dihydrate per gallon of sodium molybdate solution 35%. To yield 1 gallon sodium molybdate solution 35%, mix 4.7 lbs. Sodium molybdate dihydrate + 6.82 lbs. water.

Example:

Mix 1 x 250 lb. Drum sodium molybdate dihydrate with 43 gallons (360 lbs) water to yield 610 lbs. Solution 35%.

One (1) gallon of Sodium Molybdate Solution 35% weighs approximately 11.52 pounds

The liquid displacement of 1 lb. sodium molybdate dihydrate in 1 gallon of water = 1.04 gals.

Mixing:

Moly should not be directly tank mixed with an inoculant since it (like fungicides) is toxic to the Rhizobium bacteria in the inoculant. The order of entry of adding products to the pre-mix or slurry tank is as follows:

1. Water
2. Moly (slowly with agitation)
3. Fungicide (after moly is in solution)
4. Dye (or extra dye if applicable)