

NutraSul 90

KEGRIVER

AMP
Advanced Micronutrient Products

Premium Sulphur Fertilizers

Sulfur: The Fourth Major Nutrient

- Important to crop yield and quality
- Improves soil conditions
- Promotes efficient absorption and metabolism of NPK
- Essential to synthetic and catalytic plant reactions



Benefits of NutraSul 90:

- Effective in soil amendment for correcting Alkali and Saline Alkali soils and lowering soil pH
- High Sulfur analysis reduces input costs of transportation, storage and handling
- Season-long Sulfur nutrient availability
- No seed damage when placed with seed
- Low risk of leaching losses compared to Sulfates; also reduces Nitrate leaching
- Pastille form minimizes dust generated from handling, to reduce airborne dust and clogging in application units
- Allows the grower to select the form of Nitrogen and the preferred application time
- Autumn broadcast distributes workload and improves pastille disintegration for the spring



NutraSul 90 Organic is OMRI listed and sold separately

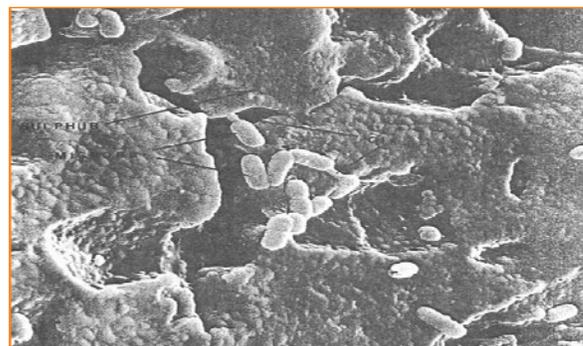
Specifications:

- Guaranteed Analysis: 90% Sulfur (Actual)
- Angle of Repose: 29 degrees
- Particle Size: Size guide number (SGN): 260
- Bulk Density: 75 lbs per ft³ (1201 Kg per m³)

About NutraSul 90:

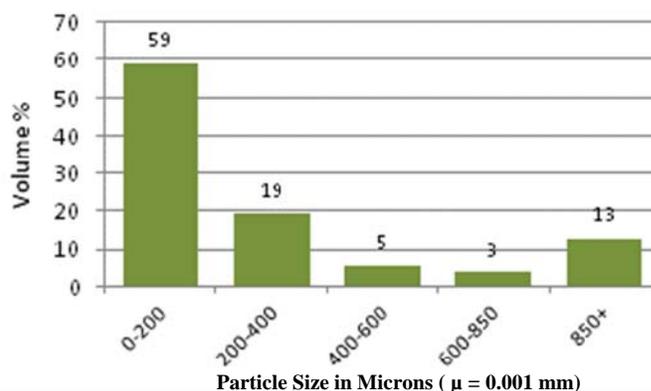
Bentonite in NutraSul 90 is activated by water:

- Swells to break down pastilles
- Fine particles = high surface area exposure to soil microbes - faster oxidation to Sulfate



Thiobacillus bacteria attached to Sulfur

Particle Sizes of Degraded NutraSul 90



Laser Diffraction Analysis 2011:

- Disintegrated in water for 24 hours
- 0 – 200 μ size: very fine powder likely available as Sulfate through the first year (to 0.2 mm or 0.008")
- Average of 87% of samples disintegrated to less than 20 mesh size (0.85 mm or 850 μ)
- Result is the right mix of particle sizes for season long conversion of Sulfur to Sulfate

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Keg River Sulfur: Specifications

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Product Description:

- NutraSul 90 is a Sulfur-Bentonite fertilizer that contains a carefully chosen Bentonite Clay that thoroughly breaks down the pastille when activated by water.
- Not all clays provide useful swelling and hydration. Using a *good* clay ensures that NutraSul 90 degrades to very fine particles, creating very high surface area exposure to soil microbes for a good oxidation rate in soil.



Application Recommendations:

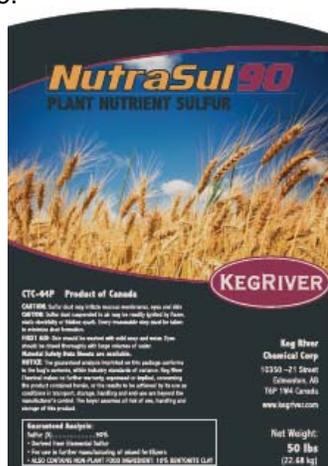
- Applied alone or blended with other fertilizers.
- Application rate is based on agronomic recommendations from soil tests & crop removal rates of Sulfur.
- If soil Sulfur is deficient, soluble Sulfate should be applied to crops requiring high Sulfur (e.g. oil seeds and legumes).
- NutraSul 90 can be used in Soil Amendment.
- NutraSul 90 can be banded or broadcasted; broadcasting in the fall has the benefit of exposing pastilles to freeze-thaw and moisture over winter for more thorough disintegration.
- Repeat applications of NutraSul 90 result in the improvement of soil populations of Sulfur processing bacteria—the soil becomes more efficient in processing Sulfur to Sulfate.

Packaging:

- Bulk Truck or Rail
- 2700 lb (1225 kg) MBB
- 50 lb (22.68 kg) Bags

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- Size guide number: 260
- Bulk Density: 75 lbs per ft³
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Safety Considerations for Fertilizer Dealers

Fertilizer Dealers should be aware of safety considerations when handling degradable elemental sulfurs. These concerns are not usually as important to growers because sulfur is often received blended with other nutrients – this considerably reduces most safety considerations.

- Sulfur is classified as non-hazardous and non-toxic, but awareness of potential problems must be stressed to ensure safe handling of this material:

Minimize Dust Formation

- Handle solid sulfur no more than necessary.
- Use gentle conveyance systems such as conveyer belts at speeds of 250' per minute or less. Screw conveyors generate considerably more dust. Drag conveyors work well but should not be run dry.
- When finished unloading bulk material, another bulk product such as MAP or KCl can be used to chase sulfur residue from the system.
- Minimize transfer points and drops at transfer points to reduce attrition of sulfur pastilles.
- Where possible, use storage bins with steep bottom cones (e.g. 55° or 60°) to minimize pastille fractures as they fall to the bottom of the bin.
- Reduce drop heights to less than 12'.
- Dust control agent should be applied during load out. Keg River's dust control agent reduces fire hazard of the product by over 80%.
- Dust suppressants are less effective over time, and after repeated handling.
- Conveyor and storage systems should be grounded.
- Hand tools used in sulfur handling area should be non-sparking engine-driven equipment, equipped with spark arrestors and protected muffler and exhaust systems.
- Check inventory after unloading to ensure there is no fire. This is more risk of fire at the end of the transfer as the equipment is run dry and accumulated fines appear in the system.
- Avoid enclosed spaces.
- Wear suitable protective clothing, gloves and eye protection.