

PureGrade Liquid Plant Food



GoldStart® 9-18-9 vs. Generic 9-18-8-5S

GoldStart 9-18-9

Generic 9-18-8-5S

Calculated Salt Index

17.6

38.3 (The salt index for 9-18-8-5S is more than double the salt index of GoldStart 9-18-9!) Fertilizer intended for row placement generally should have salt indices of 20 or less.

Analysis

Manufactured with low salt index raw materials, GoldStart 9-18-9 has been proven a safe and dependable performer for many years.

Manufactured with potassium thiosulfate, an otherwise excellent fertilizer, but with a salt index higher than 28% UAN solution. 9-18-8-5S should be an excellent analysis for deep placement where sulfur is desired. Because of its high salt index extreme caution should be used when placing the product in-furrow. Consider the cost of a bag of multi-trait seed corn before applying 9-18-8-5S on the seed.

Rate of Use

GoldStart 9-18-9 application rate is 5 gallon/acre. It has been used at this rate for many years, on many different soil types, on many different corn numbers and other crops.

The makers of 9-18-8-5S recommend 5 gallons/acre. This places 1/3 more potassium thiosulfate into the seed furrow than the highest rate recommended by the potassium thiosulfate manufacturer. The manufacturer recommends 2-4 quarts of potassium thiosulfate in the seed furrow when mixed with “popup” fertilizers. Five gallons/acre of 9-18-8-5S applies nearly 5.5 quarts/acre of potassium thiosulfate or about 1/3 more than the highest recommended rate by the manufacturer.

Type of Phosphorus

GoldStart 9-18-9 is 80% Orthophosphate content, 20% Polyphosphate. Orthophosphate is the form of phosphate that plants can absorb into the roots. Fertilizers with high percentages of orthophosphate are recommended when immediate availability to plants is desired such as for seed furrow placement.

9-18-8-5S is 30% Orthophosphate content and 70% Polyphosphate. This fertilizer is mostly in the form of polyphosphate. The poly form of phosphate will convert to ortho with time and warm temperatures. Since time is needed for poly conversion to ortho this fertilizer is best used where immediate availability to the crop is not necessary. Fertilizers high in polyphosphates are best placed where they can be accessed by the root system later in the growing season after the poly has converted to orthophosphate.

Shelf Life

GoldStart 9-18-9 has a longer shelf life. Because GoldStart fertilizers are made primarily from high quality phosphoric acid and potassium hydroxide there are fewer impurities to settle out during storage. GoldStart fertilizers are not affected as much by temperature extremes.

9-18-8-5S is manufactured from standard grades of phosphoric acid (polyphosphates) that contain impurities. Over time polyphosphates lose their chelating ability to hold impurities in solution. Potentially, impurities can settle out creating additional labor for cleaning and may cause increased plugging of filters and orifices.

Viscosity

Because of differences in the raw materials used in each product, GoldStart 9-18-9 can be expected to have a lower viscosity. This means that GoldStart 9-18-9 will flow more easily through filters and orifices during cold temperatures.

Sulfur

Sulfur does not need to be placed in the seed furrow. Sulfur is mobile in the soil and may be applied by any number of excellent methods. It can be broadcast with either liquid or dry fertilizer grades including nitrogen. It may be banded deep or in a 2x2 position. Growers who want to include several pounds of sulfur per acre applied with starter fertilizer should consider only 2x2 placement for seed safety and peace of mind.

What Universities Say

“Thiosulfate should not be applied in direct seed contact because the thiosulfate ion is very caustic to germinating seed.”¹

Conclusions

GoldStart 9-18-9 does not contain potassium thiosulfate and has a much lower salt index compared to 9-18-8-5S. The potassium source for 9-18-9 is potassium hydroxide. GoldStart 9-18-9 has been an excellent performer for many years as an in-furrow starter fertilizer. It is also used in the 2x2 position.

Potassium thiosulfate is an excellent source of both potassium and sulfur, but because of its high salt index it should not be placed in-furrow at the 5 gallon/acre rate if 9-18-8-5S recommended by the supplier. Because of both its high salt index and high polyphosphate content, 9-18-8-5S should be limited to deep placement for mid-season uptake. There are better and safer methods to apply sulfur than in the seed furrow.

¹K-State Extension Agronomy e-Updates. Number 25, March 24, 2006. Kansas State University.