



FOR PLANTS:

- Contains essential plant nutrients: Magnesium and Sulfur
- Optimum solubility needed to make true clear solutions and compatible with other soluble nutrients
- Ideal source for all Fertigation Systems: center pivot, micro-jet, drip-trickle and foliar spray applications

- Magnesium is critical as a central element in the chlorophyll molecule to capture energy from the sun and convert it to plant sugars via photosynthesis
- Magnesium is especially required in sandy soils, soils with low CEC, for crops with high Mg demand and in situations of high applications of ammonium-N and/or Potassium

CROP	YIELD LEVEL	LBS MG taken up
Alfalfa	10 tons	53
Bermudagrass	10 tons	50
Corn	200 bu	53
Cotton	1500 lbs	35
Potatoes	25 tons	50
Rice	7000 lbs	14
Soybean	60 bu	27
Onions	30 tons	37
Tomatoes	40 ton	36
Wheat	80 bu	24

FOR ANIMALS:

- Contains macro-nutrient Magnesium and secondary nutrient Sulfur
- Excellent solubility means greater animal bio-availability than other Mg sources
- Effective Mg for the prevention and treatment of hypomagnesaemia and grass tetany; especially in early lactating dairy cows
- Effective Mg nutrition in non-ruminant feeds; also used for enhanced mobility, reduced discomfort and a beneficial calming effect
- Magnesium is an important co-factor in enzymatic reactions vital to every metabolic pathway in every animal species

Mg SOURCE	Mg CONTENT	RELATIVE BIOLOGICAL VALUE*
Mag-sulfate	100 g/kg	96%
Mag-chloride	120 g/kg	89%
Mag-phosphate	260 g/kg	86%
Mag-oxide powder	510 g/kg	84%
Mag-oxide granular	510 g/kg	61%

* Feed Ingredient News, Sept. 2004

ESSENTIAL MINERAL NUTRIENTS FOR PLANTS AND ANIMALS

CHEMICAL PROPERTIES:

Chemical Name Magnesium Sulfate

Heptahydrate

Formula $MgSO_4 \cdot 7H_2O$

CAS No 10034-99-8*

GRAS – Generally Regarded As Safe

GUARANTEED ANALYSIS

Magnesium (Mg) 9.8% (min.)
9.8% water soluble magnesium

Sulfur (S) 12.9% (min)

VARIABLE SOLUBILITY DATA TABLE*

Saturated Solution with 70°F water = 5.5% Mg

Saturated Solution with 60°F water = 4.7% Mg

%Mg Solution**	1 Gallon Water (70°F)	Amount Magnesium Sulfate Hepta.
5% Mg	1 Gallon (8.33 lbs)	8.5 lbs
4% Mg	1 Gallon (8.33 lbs)	5.7 lbs
3% Mg	1 Gallon (8.33 lbs)	3.6 lbs
2% Mg	1 Gallon (8.33 lbs)	2.1 lbs

* These mixing amounts based on mixing of water and magnesium sulfate hepta. only; additional inputs in solution will lessen the amount of mag-sulfate that can be added to make a saturated solution and lessen its Mg concentration.

** At any solution concentration of Mg there is 1.3 times as much Sulfur (S) in solution

For further information on the chemical properties, go to gileschemical.com/tech_info.htm

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