PMP FERMENTATION PRODUCTS

AGRICULTURE

SODIUM GLUCONATE

Sodium gluconate is used in fertilizer formulations for a variety of food stuffs. Gluconate enhances the ability of plants to absorb needed nutrients for better yields. Sodium gluconate is used because of its excellent chelating properties. This property causes it to bind a variety of metal ions. When the mineral deficiency of a particular soil is known, these micronutrient formulations can be custom made to supply plants with missing or deficient minerals.

PLANT SCIENCE

The soil microflora produce a wide variety of enzymes. One of these is glucose oxidase, a common enzyme, that can produce gluconic acid in the root zone. Gluconic acid can very readily solubilize phosphate in the soil and render it available as a plant nutrient. Gluconic acid can also react with various mineral sources, carbonate, oxalates, etc., to produce mineral gluconates. these can then be rapidly absorbed by the plant root system.

COMMERCIAL USE

Commercial fertilizer producers use gluconate in a mineral extraction process to produce a highly soluble liquid fertilizer. The mineral gluconates (Ca, Fe, K, Zn, Mg, Mn) because of their solubility and lack of tissue irritability are gaining acceptance in hydroponic and foliar fertilizer applications.

The chelated mineral gluconate compounds are

- Suitable for Soil or Foliar Applications
- Suitable for Drip Irrigation
- Stable and will not precipitate at low temperatures
- Compatible with most Herbicides and Insecticides

These compounds are not recommended for use with antibiotics or growth regulators.

Chelated micronutrients can be used on a variety of products

Vegetables	Row Crops	Fruits	Nuts
Grapes	Citrus	Olives	Ornamentals

IMPROVED UPTAKE

The use of gluconate improves the uptake of nutrients by the plant root system. The following chart shows an example of the improvement that is made by using a mineral chelated versus other compounds such as a mineral sulfate.

Composition	Zinc (ppm)	% Improved
Zinc Sulfate	37.5	19.5
EDTA Zinc	40.4	10.9
Zinc Chelate	44.8	___

Sodium gluconate and gluconic acid are non-toxic, non-corrosive, biodegradable and bio-renewable.

AVAILABILITY

Sodium Gluconate is available in solid and liquid form.

- **SODIUM GLUCONATE** is sold in 50 lb or 25 kg bags, or in bulk bags.
- **LIQUID GLUCONATE** is available in **DRUMS, TOTES** or in **BULK** as 60, 60LT or 70
- **GLUCONIC ACID 50% FCC** is a food grade product available in **DRUMS, TOTES** or **BULK**
- **GLUCONIC ACID 50% FCC ORG** is approved for use in organic applications and is available in **DRUMS AND TOTES**.

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