STRUVITE

Struvite from wastewater by "PHORWater" process.

Keywords: Struvite • phosphates • raw material • nutrients recovery • fertilizers

Key facts:

→ **Product Category**: PFC 1C
→ **Input material**: Wastewater sewage
→ **General appearance**: Crystalline salt. Particle size between 540-806 microns
→ **Nutrient Content (N-P-K %)**: 5 N%, 29 P2O5%, <1,0 K2O%
→ **Product status**: advanced development stages.
→ **Permit availability**: not commercial yet.
→ **Geographical area**: Spain
→ **Price range**: 200-260 €/ha

Summary: Max 1400 character

Struvite is a potentially marketable product for the P fertilizer industry. Its genuine slow release property can be more efficiently used by crops, because it meets nutritional demands of crops in a better way and prevents the burning of plant roots, even when applied in excess quantities, guarantees a slow but steady nutrient supply. Moreover, struvite is an effective water-soluble phosphorus fertilizer in neutral and slightly acidic soils. The amount of phosphorus and magnesium that the struvite could provide is higher than typical fertilizers (12% P and 9% Mg). However, the amount of nitrogen is lower than typical fertilizers (around 5 %N) and the percentage of potassium is very low so it is recommended to apply combined with conventional fertilizers to satisfy N and K demand. It can be easily combined with other solid fertilizers or dissolved in a slightly acidic solution. Cd has not been detected and the amount of organic matter is very low, TOC is lower than 0.8%, thus it is a secure environmental friendly product.

How to use:

→ **Type of farming**: organic, low input, conventional. ALL
→ **Cultivation methods**: open field, greenhouse
→ **Recommended crops**: cereals for the production of grain, wheat and spelt, rye and winter cereal, barley, oats and spring cereal, grain maize and corn-cob, root crops and plants harvested green from arable land by area, dry pulses and protein crops, permanent grassland.
→ **Application dose**/ha
  For the agricultural assays the application doses was 1.170 kg of struvite per hectare for potatoes and 921 for wheat.

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Key product features:

→ Crystalline salt / granule. Easy to handle
→ Very low organic matter.
→ Very low heavy metals.

Key product benefits:

→ **No overdosing risk**, avoids burning roots.
→ **High bioavailability**. Nutrients in struvite can be readily absorbed by the plant. Organic acids commonly exuded by plant roots increase P-struvite uptake.
→ Provides **steady nutrient supply**.

**Competitive position and advantages:**

Why this product is best for solving nutrient recovery problems?

*Increases P recovery from WWTPs* compared to other WWTP recovery processes.

*Obtained product with steady composition.* Most of the commercial phosphates have variable composition and do not constitute a defined chemical entity instead, they are mixtures of monocalcium phosphate, bicalcium phosphate, phosphoric acid, calcium carbonate and impurities.

*No detected Cd.* Almost any presence of heavy metals in comparison with phosphate rock derivates.

*Slow release – slow leakage.*

*Easy to handle in powder form.* Easy transport, storage and handling.

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