



Boosting profitable quality

For clean drip systems
and most efficient nutrient uptake!



Prevent the
blocking of
irrigation
systems



Ultrasol®
Magnum P44®

Ultrasol® Magnum P44 is a unique product, because it is the only dry, strong acid in crystalline form. Thanks to its acidic action, Ultrasol® Magnum P44 considerably increases the absorption of nutrients from the soil.

Ultrasol® Magnum P44 contains 18% nitrogen (N) and 44% phosphorous (P_2O_5). As it is both 100% water soluble and a strong acidifier, it contributes to an optimal nutrient distribution, prevents the blocking of irrigation systems and improves the nutrient uptake efficiency.

Ultrasol® Magnum P44 is the best investment for your crops, leads to optimal profitability and fuels your business.



Higher yield and better quality and therefore a better return on investment.



Improved P efficiency and nutrient uptake in general.



Anti-clogging properties.



Easy to handle and safe to use.





Characteristics and advantages of **Ultrasol® Magnum P44**

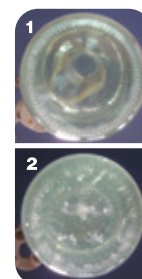
1. Ultrasol® Magnum P44 consists of 62 % phosphoric acid and 38% urea. All other acids are in a liquid form, for example nitric acid, sulphuric acid and phosphoric acid. Moreover, a dry acid does not have the handling hazards which are often associated with liquid acids.
2. Due to its acidifying nature, Ultrasol® Magnum P44 is particularly suitable for calcareous and alkaline soil conditions.
3. Under normal conditions no extra acid treatment is required if Ultrasol® Magnum P44 or Ultrasol® Magnum P44 based water soluble NPKs are applied
4. Ultrasol® Magnum P44, or Ultrasol® Magnum P44 based water-soluble NPKs, acidifies the water and reduces the bicarbonate content. For example, to neutralize 61 ppm bicarbonate, which equals 1 millimole or 1 milli-equivalent bicarbonate per litre, 158 mg Ultrasol® Magnum P44 per litre of alkaline water is needed. The table on the right shows the amount of bicarbonate to be neutralized and the amount of Ultrasol® Magnum P44 needed.
5. The acidity of Ultrasol® Magnum P44 helps to prevent blockage of pipes and nozzles of the irrigation system, which particularly might occur in hard water. Hard water is high in calcium and magnesium, which are mainly present as calcium and magnesium bicarbonates and carbonates.

6. The acidity increases the nutrient uptake efficiency, which results in more leaf chlorophyll and net photosynthesis, thus higher crop productivity.

7. The maximum solubility of Ultrasol® Magnum P44 is higher than that of other P sources, like DAP, MAP or MKP. At 20 °C the solubility of Ultrasol® Magnum P44 equals 960 g/l, compared to 690 g/l for DAP, 380 g/l for MAP and 230 g/l for MKP.

Picture 1 shows the positive effect of Ultrasol® Magnum P44 in a water soluble NPK containing Ultrasol® Magnum P44, compared to the same formula without Ultrasol® Magnum P44 (picture 2), in hard water after one month. The solution remained clear when using the formula with Ultrasol® Magnum P44 (picture 1), whereas the solution using the formula without Ultrasol® Magnum P44 showed precipitations of insoluble salts at the bottom of the glass (picture 2). Such precipitations will block nozzles and drip lines in irrigation systems.

Bicarbonate		Ultrasol® Magnum P44 in mg/l
ppm	mmol/l or meq/l	
38.6	0.63	100
61	1.0	158
122	2.0	316
183	3.0	474
244	4.0	632
305	5.0	790



Properties of **Ultrasol® Magnum P44**

Ultrasol® Magnum P44 specifications	
Total ureic nitrogen content (N)	18 %
Total phosphorus content (P ₂ O ₅)	44 %
Total phosphorus content (P)	19.2 %
Solubility	>99.8 %
Moisture content	<0.3 %
EC (1 g/l at 25 °C, in mS/cm)	1.51
pH of 1% solution	1.8
pH of 0,05 % solution	2.8
Form	crystalline, odourless powder
Colour	white

H ₃ PO ₄ at different concentrations (%)	Ultrasol® Magnum P44 in mg/l	Neutralizing power of bicarbonate mmole/l or meq/l	ppm
100 mg/l H ₃ PO ₄ 100%	161	1.02	62
100 mg/l H ₃ PO ₄ 85%	137	0.87	53
100 mg/l H ₃ PO ₄ 75%	121	0.77	47
100 mg/l H ₃ PO ₄ 59%	95	0.60	37

Applications of **Ultrasol® Magnum P44**

Ultrasol® Magnum P44 can be used in fertigation, band application, water soluble NPK production and foliar applications. The table on the right shows the recommended doses per type of application. The presence of urea in Ultrasol® Magnum P44 will facilitate the penetration of other nutrients applied via foliar sprays. The reduction in pH of the spray tank solution may increase the availability of nutrients and improve the stability of pesticides when sprayed together in a tank mix. However, pH levels below 4 may provoke scorching. Ultrasol® Magnum P44 is not recommended in hydroponic systems with inert substrates, like rockwool or perlite.

	Dose		
	Conc. %	g/litre	kg/ha
Fertigation in soil grown crops (open field and greenhouse)	0.01 - 0.05	0.1 - 0.5	
Band application: at sowing using a micro granule applicator)			50
in an aqueous solution	0.5	5	
Foliar spraying	0.1 - 3.0	1 - 30	

DISCLAIMER

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