

Haifa MAP™ - Mono Ammonium Phosphate 12-61-0

Haifa MAP™ is a fully water-soluble fertilizer for Nutrigation™ and foliar feeding of all crops

As a highly efficient source of phosphorus and nitrogen for plants, Haifa MAP™ is recommended for use at the beginning of the growth season, when phosphorus availability is crucial for the establishment of the root system. Haifa MAP™ can be tank-mixed with other fertilizers to meet crop nutritional needs throughout the growth cycle*.

Haifa MAP™ is suitable for preparation of fertilizer blends and for production of liquid fertilizers.

*Note: Haifa MAP™ should not be mixed with calcium or magnesium fertilizers.

The advantages of Haifa MAP™

- Fully water-soluble

- Consists of 100% plant nutrients

- Highly-concentrated source of phosphorus for plants (61% P₂O₅ / 27% P)

- Free of chloride, sodium and other detrimental elements for plants

- Moderately low pH (safer and less corrosive compared to urea phosphate)

Suitable for [Nutrigration™ \(Fertigation\)](#) , [foliar application](#) and production of fertilizer blends and nutrient solutions

Double benefit: Not only is Haifa MAP™ an efficient source of phosphorus, it also facilitates plant uptake of the phosphorus naturally present in the soil. This is due to the ammonium (NH₄⁺) in Haifa MAP™, which lowers the pH in the root zone and thus enhances phosphorus availability.

[View the product page](#)

Product analysis

Nutrient	Content
P ₂ O ₅	61%
P	27%
N total	12%
N-NH ₄	12%

Water solubility

The solubility of Haifa MAP™ is considerably enhanced by increase in water temperature, as shown in the following table.

Water temperature (°C)	0	10	20	30	40

pH and EC
Haifa MAP™ has a moderately low pH that remains almost

Water temperature (°C)	0	10	20	30	40
Solubility (g/100g water)	22.7	29.5	37.4	46.4	56.7
Concentration (%)	0.1	0.2	0.3	1.0	5.0
PH	4.7	4.6	4.6	4.4	4.2

constant at different concentrations.

The electrical conductivity (EC) increases substantially when high concentrations of Haifa MAP™ are used.

Concentration (%)	0.1	0.2	0.3	1.0	5.0
EC (mS/cm)	0.86	1.66	2.5	7.4	27.8

Application Recommendations

Nutrigation™

Due to its unique characteristics, Haifa MAP™ can be applied through any irrigation system and on any growing medium. Unlike phosphoric acid, Haifa MAP™ is moderately acidic. Thus, it does not form corrosion on fertilizer pumps or irrigation equipment.

Compatibility

Haifa MAP™ is compatible with most water-soluble fertilizers, except for fertilizers containing calcium (Ca⁺⁺) or magnesium (Mg⁺⁺).

To apply Haifa MAP™ in combination with calcium or magnesium fertilizers, use two fertilizer tanks. If the system includes only one tank, apply these fertilizers at different times.

Quantitative Nutrigation™

Each kilogram of Haifa MAP™ in the tank provides 610 grams of phosphorus oxide (P₂O₅) and 120 grams of ammonium-nitrogen (N-NH₄).

Example: from initial establishment to flowering, open-field grown tomatoes require phosphorus at a rate of 1.5 kg P₂O₅ per hectare per day. To provide this, apply Haifa MAP™ at a rate of 2.5 kg per hectare per day. This will supply also 0.3 kg nitrogen per hectare per day. To complete nitrogen and potassium requirements, apply ammonium nitrate and Multi-K™ (potassium nitrate).

Proportional Nutrigation™

The phosphorus concentration in the irrigation water depends on the quantity of Haifa MAP™ in the tank mix, and on the injection ratio. Use the following table to calculate the quantity of Haifa MAP™ and the injection ratio needed to reach a given concentration in the irrigation water.

Product analysis

Haifa MAP™ g/1000 liter water	Nutrient concentration (ppm, g/1000 litre)		
	N	P ₂ O ₅	P
100	12	61	27
130	15	79	34
149	17	90	40
185	22	112	50

Haifa MAP™ g/1000 liter water	Nutrient concentration (ppm, g/1000 litre)		
	N	P ₂ O ₅	P
370	44	225	100

Foliar Nutrition

Foliar spray with Haifa MAP™ is effective in supplying phosphorus whenever quick response to deficient plants is required. It should be considered as a supplemental method to soil applied phosphorous. The concentration of Haifa MAP™ solutions can be increased according to leaf age.

On young leaves, a spray concentration of 0.5% Haifa MAP™ is recommended in most crops. On mature leaves and more tolerant crops a higher concentration (1.0% or more) may be applied.

Haifa MAP™ is compatible with most commonly used pesticides and fertilizers. However, it should not be mixed with calcium or magnesium fertilizers. It is advisable to confirm compatibility of your intended spray-mix by preparing a sample of the spray materials at their recommended concentrations to rule out the possibility of a detrimental cross reaction. This mixture should be sprayed onto small area prior to commercial treatment, to assess whether an adverse effect occurs.