# Haifa MKP™

## Mono Potassium Phosphate 0-52-34

Haifa Chemicals Ltd.
Pioneering the Future

Haifa MKP™ is a fully water-soluble mono-potassium phosphate fertilizer, a highly efficient source of phosphorus and potassium for plants. As a nitrogen-free fertilizer, Haifa MKP™ is the preferred source of phosphorus and potassium when nitrogen fertilization should be limited. A common case is at early growing season, when phosphorus and potassium are needed at high rates for the establishment of root system. Application of Haifa MKP™ at the productive stages of sugar-rich fruit crops helps to increase sugar content and to improve the quality of these. Haifa MKP™ can be applied in combination with other fertilizers to meet crop nutritional needs throughout the growth cycle. Its high purity and water-solubility make Haifa MKP™ an ideal fertilizer for Nutrigation™ and for foliar application. Additionally, Haifa MKP™ is suitable for preparation of fertilizer blends and production of liquid fertilizers.

## The advantages of Haifa MKP™

- Fully water-soluble
- Consists of 100% plant nutrients
- Free of chloride, sodium and other detrimental elements for plants
- Safe for plants and humans: has a moderately low pH and low salt index
- Suitable for the Nutrigation™, foliar application and production of fertilizer blends and nutrient solutions

## Product analysis

| Nutrient | Content |
|---|---|
| $P_2O_5$ | 52% |
| P | 22.7% |
| $K_2O$ | 34% |
| K | 28.7% |

## Water solubility

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

| Water temperature (°C) | 0 | 10 | 20 | 30 | 40 |
|---|---|---|---|---|---|
| Solubility (g/100g water) | 14.8 | 18.3 | 22.6 | 28.0 | 33.5 |

## pH and EC

Haifa MKP™ has a moderately low pH that remains almost constant at different concentrations.

| Concentration (%) | 0.1 | 0.2 | 0.3 | 1.0 | 5.0 |
|---|---|---|---|---|---|
| PH | 4.7 | 4.6 | 4.6 | 4.4 | 4.2 |

The electrical conductivity (EC) increases substantially when high concentrations of Haifa MKP™ are used, and yet, its low salt index assures safe use.

| 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™

It is recommended to use Haifa MKP™ as a source of phosphorus and potassium where nitrogen levels should be kept low. Because of its unique characteristics, Haifa MKP™ can be applied through any irrigation system and on any growth medium. Unlike phosphoric acid, Haifa MKP™ is moderately acidic (see table on the facing page). Therefore, it is not corrosive to fertilizer pumps or to irrigation equipment.

## Compatibility

Haifa MKP™ is compatible with most water-soluble fertilizers, except for fertilizers containing calcium ($Ca^{++}$) or magnesium ($Mg^{++}$). To apply Haifa MKP™ 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 MKP™ in the tank provides 520 grams of $P_2O_5$ (230g P) and 340 grams of $K_2O$ (280g K).

## Proportional Nutrigation™

The phosphorus and potassium concentration in the irrigation water depends on the quantity of Haifa MKP™ in the tank mix, and on the injection ratio. Use the following table to calculate the quantity of Haifa MKP™ and the injection ratio needed to reach your target concentration in the irrigation water.

| Haifa MKP™ g/1000 liter water | Nutrient concentration (ppm, g/1000 litre) | | | |
|---|---|---|---|---|
| | $P_2O_5$ | P | $K_2O$ | K |
| 100 | 52 | 22 | 34 | 28 |
| 110 | 58 | 25 | 37 | 31 |
| 135 | 70 | 30 | 46 | 38 |
| 180 | 93 | 40 | 61 | 51 |
| 225 | 116 | 50 | 76 | 63 |

## Foliar Nutrition

Foliar application of Haifa MKP™ is an optional supplement to soil fertilization at growth stages when high levels of phosphorus and potassium are required. At early season foliar application with Haifa MKP™ promotes the establishment of healthy root system.

Haifa MKP™ is an efficient suppressor of powdery mildew in susceptible crops (deciduous, vineyards, mango, cucumbers, melons, roses and others). Application of 1% Haifa MKP™ mixed with systemic fungicides improves the efficiency and enable to reduce application rates of the latter.

Haifa MKP™ is compatible with most commonly used pesticides and fertilizers. However, it should not be mixed with calcium or magnesium fertilizers. Iron, manganese, zinc and copper must be in the form of chelates.

**Field-crops and vegetables:** On young leaves, spray concentration of 1.0% Haifa MKP™ is recommended in most crops. On mature leaves and more tolerant crops, concentration of 2.0% may be applied.

### Fruit-trees:

| Crop | Conc. | Timing |
|---|---|---|
| Citrus | 1-3% | 2-3 successive monthly sprays at early fruit development, starting 1 month after fruit-set |
| Stone fruits | 1-2% | 2-4 applications from fruit-set to fruit coloring |
| Table grapes | 1-2% | 1 application during fruit-set, 1 during ripening |
| Bananas | 1-2% | 2-6 applications with the application of pesticides |
| Vineyards | 2% | 1 application during fruit-set, 1 during ripening |
| | 1% | Every 2 weeks, starting when twigs are 10-14cm long until veraison, alternated with proper fungicide. |
| Olives | 3-5% | 1 application in early spring for flower induction and fruit setting,<br>2 applications during fruit development,<br>1 application on September during sizing and oil filling. |

It is advisable to confirm compatibility of your intended spray-mix by preparing a sample of the spray materials at their recommended concentrations in order to rule out the possibility of a detrimental cross reaction. This mixture should be sprayed onto small area prior to commercial treatment, in order to assess whether an adverse effect occurs.

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