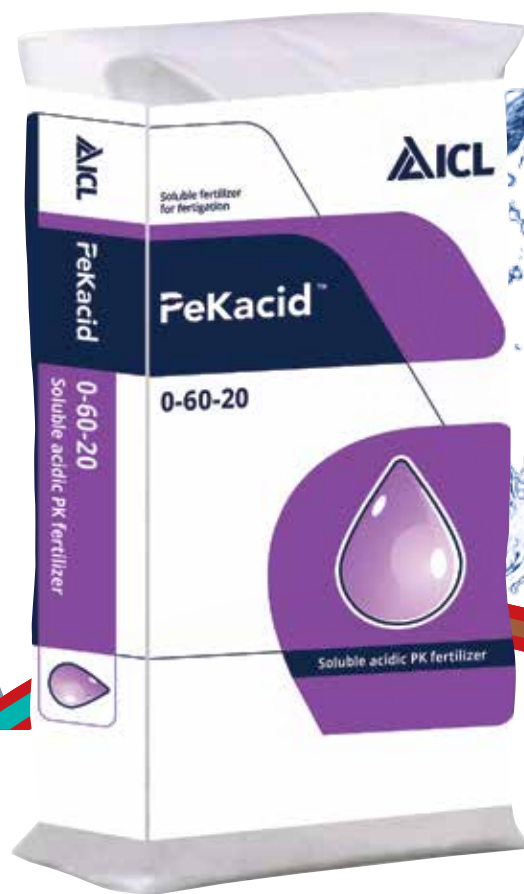


# ICL Premium Fertilizers

## PeKacid™ 0-60-20

Solid phosphoric acid in bags



# PeKacid™ 0-60-20

## P solution for calcareous soils and hard water

PeKacid™ is a new, specially tailored PK fertilizer for fertigation (open-field and soilless culture) under conditions of hard water and/or calcareous soils.

PeKacid™ is solid phosphoric acid in dry form, combining the advantages and efficiency of phosphoric acid with the ease and safety of a solid crystalline fertilizer.

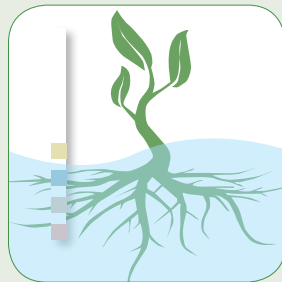
PeKacid™ has 100% assimilable nutrients, ensuring total availability of phosphorus and potassium to the plant.

PeKacid™ is chloride and sodium free, ideal for the most delicate crops.

PeKacid™ is white, fully water-soluble and practically free of impurities and residues. It quickly dissolves to a clear solution with no clogging of the irrigation system.

PeKacid™ is eco-friendly: negligible amounts of heavy metals. No residual contaminants or hazardous residues.

PeKacid™ is a unique patented product, manufactured by ICL's exclusive and proprietary technology.



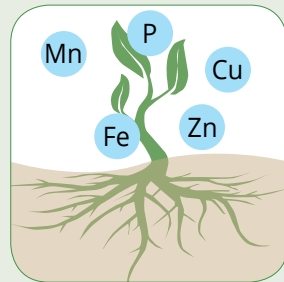
Low pH

Reduces water pH by being applied directly to hard water.



Anti clogging action

Provides acidity to neutralize and dissolve bicarbonates, avoiding clogging of pipes and drippers.



Enhances nutrient uptake

Acidifies the soil environment thus increasing the availability and uptake of phosphorus and micronutrients.



## Chemical Properties

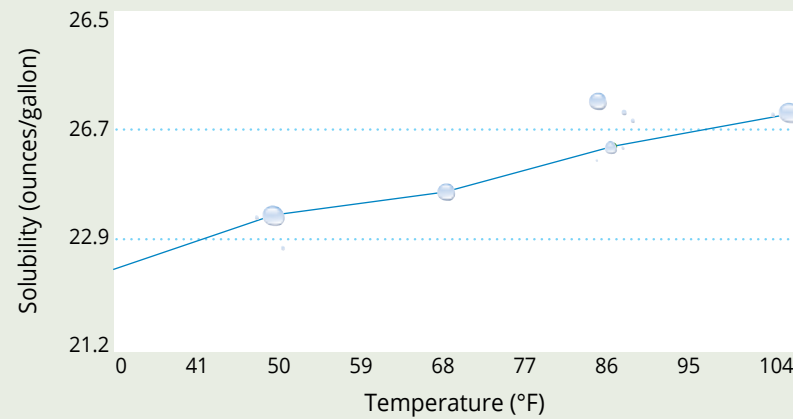
Composition	0-60-20
Double salt - monocrystal	
<b>Chemical Analysis (dry basis)</b>	
P <sub>2</sub> O <sub>5</sub> (phosphorus)	60%
K <sub>2</sub> O (potassium)	20%
Cl (chloride)	90 ppm (max)
Na <sub>2</sub> O (sodium)	150 ppm (max)
<b>Heavy Metals</b>	
Cd (cadmium)	less than 1 ppm
As (arsenic)	less than 1 ppm

## Physical Properties

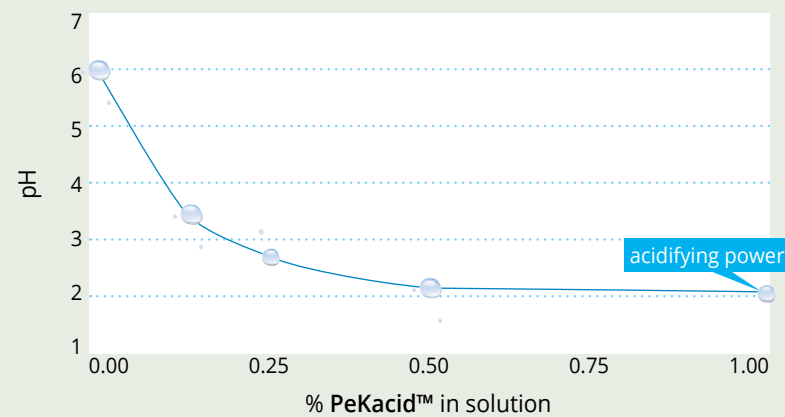
Appearance	White, odorless crystals
Melting point	260 °F
Solubility (H <sub>2</sub> O)	Fully soluble
Moisture	Less than 0.2%
Insolubles	Less than 0.1%
Bulk density	1.27 kg/liter (loose)
pH (1% solution)	2.2
EC (1 g/L at 25°C)	1.40 mS/cm
Solubility in water	5.5 lbs. in 1 gallon of water (analysis of the solution 0-24-8)

P<sub>2</sub>O<sub>5</sub> to P: multiply P<sub>2</sub>O<sub>5</sub> by 0.4364; K<sub>2</sub>O to K: multiply K<sub>2</sub>O by 0.8302

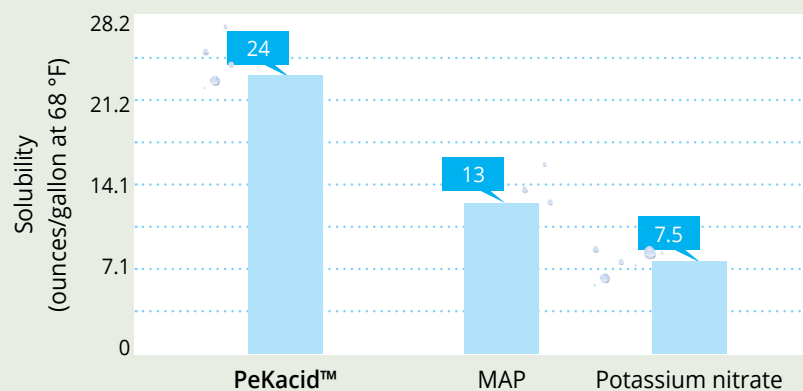
## PeKacid™ solubility



## Effect of PeKacid™ on solution pH



## PeKacid™ - High solubility



## Agronomic advantages

**PeKacid™** decreases the pH of water and soil, thus improving nutrient availability and nutrient uptake efficiency, and increasing yields and quality of crops.

**PeKacid™**'s acidifying power increases the uptake of many nutrients and helps in releasing fixed micronutrients (Fe, Zn, Mn, Cu) in calcareous/alkaline soils.

**PeKacid™** supplies  $H_2PO_4^-$  (orthophosphate) ion, which is a readily available form of phosphorus (P). Its acidifying power decreases the P fixation in the fertigated zone of the calcareous soil, thus improving the uptake of phosphorus.

**PeKacid™** supplies potassium (K) in its valuable chloride-free form like in MKP (monopotassium phosphate) and  $KNO_3$ .

Integrating **PeKacid™** in the early season application provides an excellent starter fertilizer, ensuring quick and strong crop development.

Since **PeKacid™** is a nitrogen-free fertilizer, it allows full and independent control over the N level in the fertigation program, either by choosing the best form of complementary N or by refraining from N application, in accordance with the requirements of the crop.

**PeKacid™** is compatible with calcium (Ca) and magnesium (Mg) fertilizers. Usually P fertilizers can not be mixed with Ca and Mg containing fertilizers and therefore, two fertilizer tanks should be used or P and Ca/Mg should be applied at different times. **PeKacid™** allows the mixing with Ca and Mg fertilizers in soluble NPK formulae, due to its low pH which avoids the precipitation of insoluble Ca/Mg phosphates compounds.

**PeKacid™** develops an acidic soil environment that reduces nitrogen volatilization, which is very common when urea and/or ammonium fertilizers are applied to calcareous soils. This increases the efficiency of N fertilizer use.





## Keep the system clean

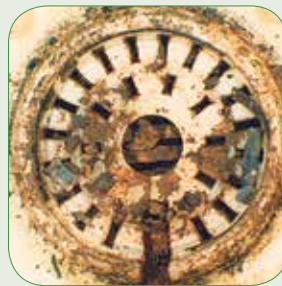
**PeKacid™** provides acidity to neutralize and dissolve bicarbonates, thus avoiding the problem of scaling and clogging of pipes and emitters/ nozzles in the sensitive drip irrigation system:

- Longer lifespan of the irrigation system.
- Uniform and efficient distribution of irrigation water and fertilizers.
- Less work needed.
- No additional acid needed.

The increased longevity of drip irrigation systems is an additional, special benefit special benefit when applying **PeKacid™** under SDI (subsurface drip irrigation).

When used in a concentrated form, **PeKacid™** can also dissolve/ disintegrate existing carbonate deposits from calcium carbonates or calcium and iron phosphates.

**PeKacid™** can replace alternative concentrated P fertilizers such as phosphoric acid, MAP, MKP and UP, and become the ultimate P carrier for fertigation.



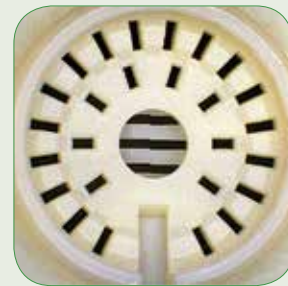
**Blocked**

Blocked dripper due to precipitates formed while using hard irrigation water.



**Cleaning**

Dripper being cleaned while using **PeKacid™** (precipitates are dissolved).



**Unblocked**

Cleaned, unblocked dripper after using **PeKacid™**.

## PeKacid™ – Safe to use

**PeKacid™** is a solid acid in a dry form. The product is free-flowing with no color or odor.

**PeKacid™** can replace all or part of the other acids added to the fertigation program, and offers a safer, user-friendly fertilizer source.

## PeKacid™ as a nutrition source in fertigation solution

Add **PeKacid™** at a rate of 0.77-3.3 lbs. per 1000 gallons, based on crops and environment conditions. Avoid mixing **PeKacid™** with Thiosulfate based products. Fertigation with **PeKacid™** increases the availability of other nutrients including micro nutrients.

## PeKacid™ as an acidifier for drip line cleaning

Apply 30-40 lbs **PeKacid™** per 1000 gallons of water within 15 minutes of irrigation. Continue to irrigate for at least 15 more minutes with clean water. For example, at an irrigation rate of 10,000 gallons per hour, 2500 gallons are passing through the system within 15 minute, Inject 75 lbs. of **PeKacid™** into the irrigation water within the first 15 minutes of the irrigation cycle.

## PeKacid™ as pH buffer of the fertigation solution

It is recommended to keep 30-50 ppm bicarbonate in the irrigation water, for buffering the water to pH ~ 6.0. Under these conditions - **PeKacid™** at a rate of 12.3 ounces/1000 gallons of water will neutralize 61 ppm of bicarbonate. **PeKacid™** should be applied based on the bicarbonate level of the specific water.

The table below indicates the amount of **PeKacid™** needs to be added at different water quality and the P<sub>2</sub>O<sub>5</sub> and K<sub>2</sub>O nutrition contribution for each level. It is based on target pH of ~6.

meq. bicarbonate in source water	ppm bicarbonate in source water	meq. bicarbonate to be neutralized	PeKacid™ lbs/1000 gallons	P <sub>2</sub> O <sub>5</sub> (lbs) from PeKacid™	K <sub>2</sub> O (lbs) from PeKacid™
0.5	31	0.0	0.00	0.00	0.00
1	61	0.5	0.38	0.23	0.08
1.5	92	1.0	0.77	0.46	0.15
2	122	1.5	1.15	0.69	0.23
2.5	153	2.0	1.54	0.92	0.31
3	183	2.5	1.92	1.15	0.38
3.5	214	3.0	2.30	1.38	0.46
4	244	3.5	2.69	1.61	0.54
4.5	275	4.0	3.07	1.84	0.61
5	305	4.5	3.45	2.07	0.69



Shalit House, 3 Shezar St.,  
Beer-Sheva 8410001, Israel  
Tel: +972-8-6598877  
Fax: +972-8-6598987  
iclsf@icl-group.com

**Premium Fertilizers**

622 Emerson Road, Suite 500  
St. Louis, MO 63141, USA  
Tel: +1-314-983-7680  
Fax: +1-314-983-7611

