

# EASY NPK 27

## **Ammonium phosphate and potassium solution with chelated zinc**

EASY NPK 27 is a concentrated source of readily available nitrogen, phosphorus, potassium and zinc.

EASY NPK 27 is a clear liquid with a pH of 6 – 6.5.

EASY NPK 27 can be used as a 'pop-up' or starter fertiliser in row crops, applied through soil injection or directed soil sprays. It can be applied via fertigation or as a foliar spray.

EASY NPK 27 can be applied with precision and offers a better distribution of nutrients than can be achieved using granular fertilisers, especially where low rates of phosphorus are required.

### **ANALYSIS (weight/volume)**

8 % Nitrogen (N) w/v as ammonium	(100 g/L N)
14 % Phosphorus (P) w/v (water soluble)	(140 g/L P)
5 % Potassium (K) w/v	(50 g/L K)
0.7 % Zinc (Zn) w/v (chelated)	(7 g/L Zn)

### **SPECIFIC GRAVITY**

EASY NPK 27 has a specific gravity of 1.315.

This gives EASY NPK 27 an analysis on a weight/weight basis of:

6 % Nitrogen (N) w/w	(60 g/kg N)
10.5 % Phosphorus (P) w/w	(105 g/kg P)
3.8 % Potassium (K) w/w	(38 g/kg K)
0.5 % Zinc (Zn) w/w	(5 g/kg Zn)

### **HEAVY METAL IMPURITIES**

Cadmium (Cd) 50 mg/kg, Lead (Pb) 10 mg/kg, Mercury (Hg) 1 mg/kg

### **“SALTING OUT” AT LOW TEMPERATURE**

Most liquids have a 'salt out' temperature. This is the temperature at which crystal precipitation and growth occurs because the solution is over-saturated and the water can no longer keep the salts in a dissolved state. With EASY NPK 27 this 'salt out' temperature is at or below 5°C. If other soluble salts or solutions containing salts are added to EASY NPK 27, the 'salt out' temperature will change.

## **DIRECTIONS FOR USE**

EASY NPK 27 can be used in a wide range of situations. It can be applied at pop-up rates in row crops or banded with the seed as a starter fertiliser. It can be used in directed soil sprays, fertigated through irrigation systems or applied in foliar sprays.

When applying EASY NPK 27 with the seed, do not exceed the recommended safe rate of nitrogen for your sowing operation, taking into account your soil type, row spacing, soil moisture status and sowing equipment. EASY NPK 27 contains a similar amount of nitrogen in 100 litres as 100 kg of MAP. As a rule of thumb, the upper limit safe rate of MAP will be the upper limit safe rate of EASY NPK 27.

Where higher rates are used and seedling damage is likely, ensure the fertiliser does not come into contact with the seed. This way, rates can be determined based on the crop's starter fertiliser requirement.

To avoid seed contact in applications behind seeding tines, band 5 cm to the side of and 5 cm below the seed. If applied on the soil surface in front of seeding tines, seed and fertiliser contact can be avoided by using press wheels to avoid dragging treated soil back into the seed furrow. It is also advisable to maintain a slow to moderate speed to ensure that soil throw does not reach adjacent rows.

For more information, refer to Incitec Pivot's 'A guide to minimising effects of seed furrow placed phosphorus fertilisers in Cotton, Corn and Sorghum'.

### **Pop-up rates in row crops**

EASY NPK 27 can be applied at rates of around 5 to 15 L/ha with up to 1000 L of water. Aim to apply 1 to 2 kg of phosphorus per hectare.

The higher rate may be required when conditions such as low soil temperatures (early in the season) or waterlogged or sodic soil situations are likely to limit growth.

### **Banded with the seed**

EASY NPK 27 can be applied as a starter fertiliser, e.g. for sorghum and cotton, on row crop planters.

Application rates will depend on factors such as the physical and chemical product characteristics, soil texture, soil moisture, application method and the amount of water that is in, or placed with the fertiliser. Also consider whether phosphorus will be applied in other ways, e.g. in a dry basal fertiliser, in addition to EASY NPK 27.

More detailed rate guidelines for medium to heavy textured soils is available in Incitec Pivot's 'A guide to minimising effects of seed furrow placed phosphorus fertilisers in Cotton, Corn and Sorghum'.

## Directed soil sprays

Spray onto the soil surface, preferably incorporating afterwards, or inject behind tines into the soil.

If applied into prepared beds in row crops close to planting time, apply deeper into the soil than the intended depth of seeding, or offset to the side of the intended position of the row.

Apply at rates of 20 to 200 L/ha, depending on the crop.

## Fertigation

Fertigation provides a convenient and labour-saving means of applying fertiliser during the growing season.

EASY NPK 27 can be applied by fertigation (dissolved in irrigation water) in the following situations:

- post-planting in annual vegetable crops, to supplement (but not replace) phosphorus applied in the basal fertiliser. Phosphorus is required early in the life of the crop, e.g. from germination. Responses to phosphorus applied through fertigation systems during the growing season will be better where sub-surface emitters are placed below the crop rows. Surface applications after planting are relatively ineffective, as phosphorus applied this way is not readily accessed by crop roots. Phosphorus does not move quickly or far from the site of application.
- in perennial crops, e.g. tree crops and vines, and sugarcane, as an alternative to applying fertiliser dry to the soil, i.e. in the solid form. Seasonal phosphorus rates will be similar to where fertilisers are applied dry to the soil.
- in crops grown under a plastic mulch, eg. strawberry. Fertigation through emitters placed in the soil is the only practical way of maintaining the soil's fertility and replacing nutrients removed in the harvested produce.

## Foliar sprays

Foliar sprays of EASY NPK 27 can be used to supplement, but not replace soil applications of phosphorus fertiliser. Too much fertiliser foliar-applied can burn plant foliage.

In annual crops, phosphorus is important from germination for root development and early plant growth. Therefore, phosphorus is best applied before or at planting. Foliar sprays may help overcome mild, but not severe deficiencies of phosphorus. If phosphorus deficiency occurs early, e.g. before there is sufficient leaf area for foliar absorption of sprays, crop yield will be irreparably harmed.

Suggested foliar application rates for EASY NPK 27 in **vegetables** are:

- On young foliage, and in sensitive crops, apply up to 500 g/100 L (0.5 % w/v).
- On mature leaves, and in tolerant crops, apply up to 1 kg/100 L (1 % w/v).

It is usually recommended that lower concentrations be used in **tree crops**, in which higher spray volumes are used than in vegetables. As a guide, use EASY NPK 27 at 250 g/100 L (0.25 % w/v).

Foliar burn may occur at these concentrations, particularly in crops such as strawberry, French bean, Navy bean and tobacco. Spray concentrations may need to be reduced in sensitive crops. If burn occurs or past experience indicates it is likely, reduce the concentration, e.g. halve these rates.

Higher rates may also be tolerated in some crops and circumstances.

Many factors affect the susceptibility of crops to foliar burn, including the type of crop being grown, its growth stage, prevailing weather conditions, the time of day that the fertiliser is applied, spray concentrations and volumes, frequency of application, water quality and application equipment.

Because of the many variables involved, precise recommendations cannot be made. The expression of symptoms may vary from year to year, week to week, and farm to farm. Burn may occur under both lush and harsh growing conditions.

If applying EASY NPK 27 for the first time, or applying to a new crop, in combination with other fertilisers, or should application procedures and equipment change, test spray on a few plants or trees first, and observe for three to four days for signs of phytotoxicity, before spraying the rest of the crop.

The best time to spray is in the early morning. Sprays can also be applied in the late afternoon or evening, or under cloudy conditions, provided the temperature is low and humidity is high. Do not spray in the heat of the day, particularly in summer, when evaporative conditions are at their highest.

If EASY NPK 27 is used in conjunction with other fertilisers in multi-nutrient foliar sprays, it may be necessary to reduce the amount and therefore concentration of the different fertilisers applied to ensure that the combined fertilizer rate is not excessive.

If urea is not being applied simultaneously to apply additional nitrogen, add urea to the spray mix at 500 g/100 L in vegetables, or 100 g/100 L in tree crops; plus a wetting agent at label recommended rates. Urea helps promote leaf uptake of other nutrients. Add a wetting agent at label recommended rates.

## **Hydroponics**

Seek specialist advice on the grades of fertiliser to use and the composition of the nutrient feed.

These will vary with the crop and growth stage.

Incitec Pivot Limited is unable to provide such specialist advice, or comment on the suitability or otherwise of its products for use in hydroponic solutions.

## **COMPATIBILITY**

### **With other fertilisers**

EASY NPK 27 is compatible with EASY U Sol, EASY PK, EASY NS, EASY ATS and EASY KS.

If EASY NPK 27 is mixed with EASY N, potassium nitrate crystals may form. These can be dissolved when sufficient water is added to the mixture. To avoid this, dilute the EASY N in an equal quantity of water before adding the EASY NPK 27.

EASY NPK 27 is not compatible with and should not be mixed with EASY Cal, Coppersol, Zincsol, Topfoliar or Mangasol.

### **With Crop Protectants**

If tank mixes of EASY NPK 27 and crop protectants are being considered, check the label of the crop protection product and only mix the products if it specifically states that it is safe to do so.

Compatibility is dependent partly on the number of additives and the rates at which they are to be applied, water quality (if diluted), application equipment (degree of agitation) and other factors such as time and method of application. Compatibility checks should be carried out even if the chemical manufacturer has recommended the proposed mix. Checks need to cover -

- Physical compatibility
- Phytotoxicity to the crop at the target growth stage
- Efficacy of the crop protection product(s)
- Efficacy of surfactant and suspending agents (compatibility aides)

If compatibility information does not exist and a joint application is desired, prepare a small amount of the proposed mix and allow to stand in a glass jar over night and observe for signs of incompatibility.

A small quantity of the test mix should then be sprayed on a small area of the target crop and observed for 3 to 4 days for any phytotoxic effects.

## **STORAGE AND CARE OF EQUIPMENT**

Store in a cool place, away from direct sunlight. Keep containers closed to minimise evolution of ammonia from the fertiliser solution.

EASY NPK 27 is corrosive to many metals.

Appropriate materials for storing EASY NPK 27 include High-Density Polyethylene (HDPE), stainless steel and fibreglass.

Do not store EASY NPK 27 in tanks of mild steel, aluminium, brass or copper alloys, concrete or galvanised steel.

Flush application and fertigation equipment after use with water only.

Where applied through fixed irrigation lines, discontinue use towards the end of the shift to flush fertiliser from the lines and off crop foliage. This minimises corrosion and the risk of leaf burn.

Refer to the Handling, Storage and Transport section of the EASY Liquids manual for further details, including appropriate materials for pumps, pipes, plumbing, valves and fittings.

### **SAFETY DIRECTIONS**

Avoid contact with eyes or skin.

Wash hands after use.

Avoid inhaling mist.

***Refer to the EASY NPK 27 MSDS (Material Safety Data Sheet) for more specific instructions.***

### **WARNING**

Before using fertiliser seek appropriate agronomic advice. Fertiliser may burn and/or damage crop roots or foliage. Because climatic and soil conditions, application methods, irrigation and agricultural practices are beyond the control of Incitec Pivot Limited and cannot be foreseen, Incitec Pivot Limited accepts no responsibility whatsoever for any commercial damage, loss or other result following the use of this product whether used in accordance with directions or not, subject to any overriding statutory provision and provided that such liability under those provisions shall be limited to the replacement of the goods as supplied or the rendering again of the services that are provided. The buyer accepts and uses this product subject to these conditions.

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