



# Universol<sup>®</sup>

## Pure power for better crops

### New Hard and Soft Water range

- Better results when using hard and soft irrigation water
- Optimises water quality for more effective nutrient take up
- Highest possible water solubility

# Universol®

## Know your water quality for better results

Water with high bicarbonate levels (>150ppm) cause system blockages. Hard water causes precipitation of nutrients in irrigation system.



To maximise the results of your crops your fertilizers and irrigation water has to work in perfect harmony. Poor irrigation water can be the root cause of many crop and growth problems.

### What is soft water?

Soft water, which is usually rainwater, is actually very good water. It contains very few nutritional elements that impede the take-up of nutrients. But there is still always a chance that problems will arise during cultivation such as:

- A calcium or magnesium deficiency caused by insufficient supply.
- Low pH buffering that results in sharp variations in the pH in the water. This can be resolved in many cases by, for example, blend with bore water to achieve the desired levels.

### What is hard water?

Hard water contains large amounts of calcium (Ca), magnesium (Mg) and bicarbonate (HCO<sub>3</sub>). Depending on the depth and location of the wells, bore water can often be hard water. Hard water can cause problems during cultivation. The most common problems are:

- Poor solubility of fertilizers.
- Sometimes high ECs in the water, leaving less space for useful nutrients.
- Rising pH and EC levels in the substrate.
- Reduced availability of nutritional elements in the root environment.
- Precipitation in the tank and blockages in the irrigation system.

Water type	Bicarbonate content
Soft water	0-60ppm
Normal water	60-150ppm
Hard water	150ppm+

### Universol Soft Water

Our three new Universol Soft Water products have been developed for application in soft irrigation water and contain NPK, Mg, Ca and a full package of trace elements.

#### Advantages of Universol Soft Water products

- Contains all elements, NPK, Mg and a full TE package including Calcium.
- Always the same composition in every batch.
- Fast plant response.
- Dissolves fully and quickly due to the 'Bright Solution System'.
- Excellent Value for money.
- Analysis to suit every crop and every growth phase.
- Healthy growth as a result of a continuous supply of Calcium.
- Improves the quality of irrigation water, reduces blockages.



**Universol Soft Water 312R**  
18-3-10+4.3Ca+1.2Mg

**Universol Soft Water 213R**  
14-3-18.3+3.6Ca+1.2Mg

**Universol Soft Water 113R**  
11-4.8-25.7+1.4Ca+1.2Mg



**Hard Water 211**  
23-4.4-8.3+1.2Mg

**Hard Water 225**  
11-4.4-23.2+1.2Mg

### Universol Hard Water

Our two new Universol Hard Water products have been developed for application in hard irrigation water, where there are high levels of bicarbonate.

#### Advantages of Universol Hard Water products

- Contains all elements, NPK, Mg and a full TE package.
- Always the same composition in every batch.
- Fast plant response.
- Dissolves fully and quickly due to the 'Bright Solution System'.
- Excellent value for money.
- Analysis to suit every crop and every growth phase.
- Healthy growth as a result of a continuous supply of Calcium.
- Improves the quality of irrigation water by taking out bicarbonates.
- The pH of the soil remains stable as a result of the HCO<sub>3</sub> - buffering effect.

# Universol®

Safe, reliable, powerful

Universol provides highly soluble nutrients that give precise feeding for every phase of crop growth. As an additional benefit, Universol fertilisers can be mixed with each other or other straights, according to the mixability table (see reverse), which allows you to customise to your plants nutritional needs. Universol Basic has been given additional trace elements, especially developed for working in A/B tank systems.

## Using Universol gives you a range of advantages:

- Optimum ease-of-use thanks to recognisable colour coding on the bag and in the product.
- Reduced risk of errors during mixing due to the colours of the basic solution.
- Magnesium in all of Universol's formulas (with the exception of Universol Special P).
- **Bright Solution System:** Improved take-up of nutrients, more efficient use of fertilizers!
- Extremely soluble in water, which improves the hygiene and flushing of your irrigation system.
- Better leaf colour due to a complete package of trace elements, including a higher amount of iron.
- Easy-to-absorb source of iron, even in cold conditions.



2038  
**Universol Yellow**  
12-13.1-10+1.3Mg  
NPK Ratio 1:3:1



2037  
**Universol Green**  
23-2.6-8.3+1.6Mg  
NPK Ratio 4:1:2



2041  
**Universol Blue**  
18-4.8-14.9+1.5Mg  
NPK Ratio 3:2:3



2042  
**Universol Orange**  
16-2.2-20.7+2.1Mg  
NPK Ratio 3:1:5



2039  
**Universol Violet**  
10-4.4-24.9+2Mg  
NPK Ratio 2:2:6



2043  
**Universol Basis**  
4-8.3-29+2.4Mg  
NPK Ratio 1:5:9

## Technical matters

### Know your water quality for best results!

- 1 Have your irrigation water analysed (irrigation water is the water you use to water and feed your plants).
- 2 Don't test just the pH and EC values: The level of bicarbonate ( $\text{HCO}_3$ ) is also key.
- 3 We recommend acidifying the water if the bicarbonate levels are higher than 150ppm. The right way to acidify depends on a number of factors.
- 4 Remember that the quality of the water can change when you mix borehole water with rainwater.
- 5 It is also important to remember to change your fertilization plan if your rainwater supply is replenished.
- 6 Consult your ICL Specialty Fertilizers advisor at an early stage.
- 7 Select the right Universol fertilizer for hard or soft water.
- 8 Refer to the 'Universol mixing table' for the options for mixing Universol with other WSFs.

#### Did you know

ICL's Technical specialists can programme your plants nutrition using *Angelaweb*. Making sure your plants are receiving the most accurate feeding regimes.



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## Mixability

Universol allows for maximum flexibility in supply of nutrition because Universol can be mixed with other fertilizers and straights.

	Universol Soft Water	Universol Hard Water	Universol Standard Range (colour coded)
Calcium Nitrate	Yes	No	No
Potassium Nitrate	Yes	Yes	Yes
Magnesium Nitrate	Yes	Yes	Yes
Magnesium Sulphate	No	Yes	Yes
Phosphoric Acid	Yes	Yes	Yes
Nitric Acid	Yes	Yes	Yes
Universol Soft Water	Yes	No	No
Universol Hard Water	No	Yes	Yes
Universol Standard Range (colour coded)	No	Yes	Yes
Other WSF NPK fert's	No	No	No



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