

Agroleaf[®] Liquid



The **high quality liquid foliar fertilizer**
containing the unique **F3 SurfActive Technology**

www.icl-sf.com

ICL Specialty
Fertilizers



Better spreading
Better retention
Better availability of nutrients

Agroleaf Liquid sprayed onto a waxy cabbage leaf

The high quality liquid foliar fertilizer!

ICL Specialty Fertilizers is launching a new portfolio of innovative, liquid fertilizers: Agroleaf Liquid. With this new portfolio we provide growers the benefits of liquid fertilizers; ease of use, easy to dilute and easy to store.

The ICL perception of solving the farmers' challenges revolves around three key focus area.

1	Innovation ICL Specialty Fertilizers is the recognized standard for product innovation and performance. Innovation areas include controlled release technologies, water soluble fertilizers and liquid fertilizers.
2	Best ingredients What you give is what you get! ICL only accepts the best ingredients to provide consistent and trouble-free products for optimal plant growth.
3	Reliability ICL's production methods are verified by three different "ISO" certifications. All products are REACH registered. Bag after bag, can after can, year in year out, you can rely on our quality.



F3 SurfActive technology

for improved availability of nutrients



Growing plants and crops without stress is the objective of each farmer. However, in our daily work we know that many factors can create stress situations. With normal nutrition via the roots a plant will get the majority of the required nutrients, however in cases when the root system is not functioning optimally or nutrition via the soil is malfunctioning, foliar feeding is a solution.

Agroleaf Liquid range contains a unique, ICL owned, technology increasing the efficiency of each foliar application; F3 SurfActive. F3 SurfActive technology consists of an innovative blend of non-ionic surfactants created to improve the nutrients' availability.

What can you expect from the **F3 SurfActive technology**



1 Better spreading

The F3 technology will lower the surface tension of the droplets and will spread the nutrients better over the leaves; this results in a greater covered area and thus a better nutrient uptake.



2 Better retention

Especially on waxy leaves, when nutrients stick to the leaves, less nutrients will run-off or bounce-off. This will give a better retention of the nutrients.



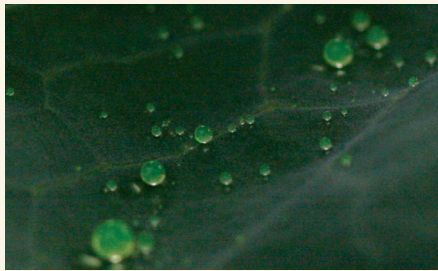
3 Better availability of nutrients

The F3 technology will allow the formation of small nutrient deposits on the leaf surface which will be re-activated after re-wetting it (e.g. high air humidity). This will avoid evaporation of droplets and provide prolonged nutrition for an improved foliar application.

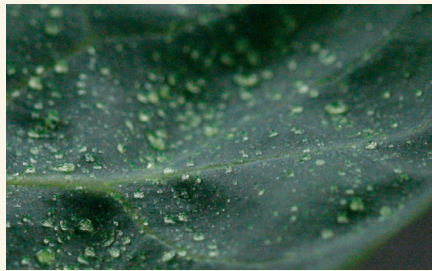
F3 SurfActive mode of action

Droplets behaviour on waxy leaves with and without F3 SurfActive technology

Under normal day-light conditions:



untreated

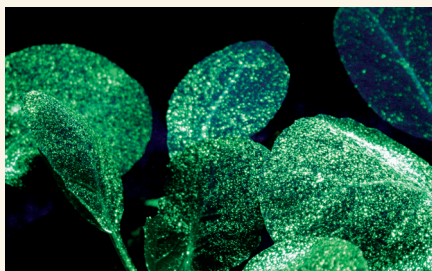


treated

Under UV-light conditions:



untreated



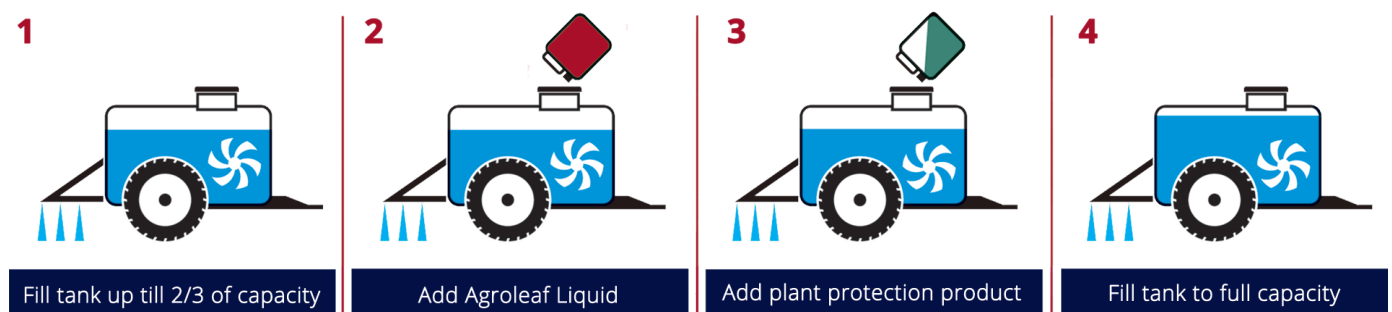
treated

Leaves treated with F3 SurfActive technology show a significant better coverage in both light conditions!

Agroleaf Liquid product range

Item number	Product Name	Formulation (% w/w)	F3 SurfActive Technology
3167	Booster	25-0-0+2MgO+TE	✓
3165	Balance	10-10-10+TE	✓
3163	High N	15-5-5+TE	✓
3169	High P	5-25-5+TE	✓
3166	High K	8-8-16+TE	✓
3162	Moly B	4-16-4+0.1B+2Mo	✓
3161	Magnesium	10MgO	✓
3160	Manganese	6Mn, EDTA	✓
3147	Zinc	8Zn, EDTA	✓
3168	Iron	4.4Fe, EDTA	✓

Agroleaf Liquid dosage



Agroleaf[®] Liquid

Booster
25-0-0+2MgO+TE



Agroleaf Liquid Booster

is a high quality liquid foliar fertilizer especially designed to boost vegetative growth, preventing and/or correcting nitrogen deficiency. The product is enriched with a consistent package of chelated trace elements.

Besides pure and high quality nutrients, Agroleaf Liquid Booster will boost vegetative growth and the protein level of cereal grains. Its efficiency is improved by the **F3 SurfActive technology** and the specific package of chelated trace-elements.

Non-ionic surfactants, embedded in F3 SurfActive technology, are directly responsible for the efficiency of the sprayed solution. HEEDTA chelated form of iron increases product flexibility to be used in wider pH range of spray solution.

GUARANTEED ANALYSES

w/w g/l

25	312.5	TOTAL NITROGEN (N)
		18% Urea-N (N-NH ₂)
		2.8% Ammoniacal – N (N-NH ₄)
		4.2% Nitric – N (N-NO ₃)
2	25	MAGNESIUM OXIDE (MgO)
0.020	0.254	Boron (B)
0.002	0.025	Copper (Cu) EDTA
0.060	0.762	Iron (Fe), HEEDTA
0.030	0.381	Manganese (Mn), EDTA
0.001	0.012	Molybdenum (Mo)
0.015	0.190	Zinc (Zn), EDTA

PRODUCT CHARACTERISTICS

Packaging	: 1 x 10 liter
Product code	: 3167.03.10GA
pH	: 6.5
EC (mS/cm) at 1 g/l	: 0.51
Density (at 25°C), g/ml	: 1.25

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Vegetables, in general	3-6	Establishment and vegetative growth, 2-3 times
Brassicas, Cauliflower, Broccoli	3-6	Vegetative growth, 3-4 times
Onion / Garlic	3-6	From 2-3 leaves up to 8-9 leaves, 2-3 times
Soft fruits, Orchards, Vineyards	3-6	Vegetative growth, 1-2 times
Cereals	5-10	1 st internode – before flowering, 2-3 times
Corn	5-10	From 4-6 leaves, 1-2 times
Oil seed rape	5-10	Vegetative growth - 1 st bud visible, 1-2 times
Ornamentals	2-3	Vegetative growth, 1-2 times

Agroleaf[®] Liquid

Balance
10-10-10+TE



Agroleaf Liquid Balance

is a high quality NPK liquid foliar fertilizer providing balanced nutrition. The product is enriched with a consistent package of chelated trace elements.

Besides pure and high quality nutrients, Agroleaf Liquid Balance provides an equilibrate nutrition for different plant stages. Its efficiency is improved by the **F3 SurfActive technology** and the specific package of chelated trace-elements.

Non-ionic surfactants, embedded in F3 SurfActive technology, are directly responsible for the efficiency of the sprayed solution. HEEDTA chelated form of iron increases product flexibility to be used in wider pH range of spray solution.

GUARANTEED ANALYSES

w/w	g/l	
10	127	TOTAL NITROGEN (N) 10% Urea N (N-NH ₂)
10	127	PHOSPHORUS PENTOXIDE (P₂O₅), water soluble 4.36% Phosphorus (P)
10	127	POTASSIUM OXIDE (K₂O), water soluble 8.3% Potassium (K)
0.020	0.254	Boron (B)
0.002	0.025	Copper (Cu) EDTA
0.060	0.762	Iron (Fe), HEEDTA
0.030	0.381	Manganese (Mn), EDTA
0.001	0.012	Molybdenum (Mo)
0.015	0.190	Zinc (Zn), EDTA

PRODUCT CHARACTERISTICS

Packaging	: 1 x 10 liter
Product code	: 3165.03.10GA
pH	: 6.5
EC (mS/cm) at 1 g/l	: 0.42
Density (at 25°C), g/ml	: 1.27

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Vegetables, in general	3-6	Establishment and vegetative growth, 1-2 times
Brassicas, cauliflower, broccoli	3-6	After row closure, 1-2 times
Onion / garlic	3-6	After 8-9 leaves, 1-2 times
Soft fruits, orchards, vineyards	1-4	Vegetative growth, 1-2 times
Cereals	3-6	2 nd internode – flag leaf
Corn	3-6	At 8-10 leaves
Oil seed rape	3-6	Autumn or early Spring
Sunflower, beans, soybeans	3-6	At 4-6 leaves
Ornamentals	2-3	During the entire crop cycle, 2-3 times

Agroleaf[®] Liquid

High N
15-5-5+TE



Agroleaf Liquid High N

is a high quality NPK liquid foliar fertilizer especially designed for vegetative growth, preventing and/or correcting nitrogen deficiency. The product is enriched with a consistent package of chelated trace elements.

Besides pure and high quality nutrients, Agroleaf Liquid High N promotes vegetative growth of the plants. Its efficiency is improved by the **F3 SurfActive technology** and the specific package of chelated trace-elements.

Non-ionic surfactants, embedded in F3 SurfActive technology, are directly responsible for the efficiency of the sprayed solution. HEEDTA chelated form of iron increases product flexibility to be used in wider pH range of spray solution.

GUARANTEED ANALYSES

w/w g/l

15	178.5	TOTAL NITROGEN (N) 15% Urea N (N-NH ₂)
5	59.5	PHOSPHORUS PENTOXIDE (P₂O₅), water soluble 2.18% Phosphorus (P)
5	59.5	POTASSIUM OXIDE (K₂O), water soluble 4.15% Potassium (K)
0.02	0.238	Boron (B)
0.002	0.028	Copper (Cu) EDTA
0.06	0.714	Iron (Fe), HEEDTA
0.03	0.357	Manganese (Mn), EDTA
0.015	0.178	Zinc (Zn), EDTA
0.001	0.012	Molybdenum (Mo)

PRODUCT CHARACTERISTICS

Packaging	: 1 x 10 liter
Product code	: 3163.03.10GA
pH	: 6.5
EC (mS/cm) at 1 g/l	: 0.21
Density (at 25°C), g/ml	: 1.19

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Vegetables, in general	3-6	Establishment and vegetative growth, 2-3 times
Brassicas, Cauliflower, Broccoli	3-6	Vegetative growth, 3-4 times
Onion / Garlic	3-6	From 2-3 leaves up to 8-9 leaves, 2-3 times
Soft fruits, Orchards, Vineyards	3-6	Vegetative growth, 1-2 times
Cereals	5-10	1 st internode – before flowering, 2-3 times
Corn	5-10	From 4-6 leaves, 1-2 times
Oil seed rape	5-10	Vegetative growth - 1 st bud visible, 1-2 times
Ornamentals	2-3	Vegetative growth, 1-2 times

Agroleaf[®] Liquid

High P
5-25-5+TE



Agroleaf Liquid High P

is a high quality NPK liquid foliar fertilizer especially designed for preventing and/or correcting phosphorus deficiency. The product is enriched with a consistent package of chelated trace elements.

Besides pure and high quality nutrients, Agroleaf Liquid High P is especially designed for preventing and/or correcting phosphorus deficiency, root development and boosting flowering. Its efficiency is improved by the **F3 SurfActive technology** and the specific package of chelated trace-elements.

Non-ionic surfactants, embedded in F3 SurfActive technology, are directly responsible for the efficiency of the sprayed solution. HEEDTA chelated form of iron increases product flexibility to be used in wider pH range of spray solution.

GUARANTEED ANALYSES

w/w g/l

5	65.5	TOTAL NITROGEN (N) 5% Ammoniacal – N (N-NH ₄)
25	327.5	PHOSPHORUS PENTOXIDE (P₂O₅), water soluble 10.9% Phosphorus (P)
5	65.5	POTASSIUM OXIDE (K₂O), water soluble 4.15% Potassium (K)
0.020	0.254	Boron (B)
0.002	0.025	Copper (Cu) EDTA
0.060	0.762	Iron (Fe), HEEDTA
0.030	0.381	Manganese (Mn), EDTA
0.001	0.012	Molybdenum (Mo)
0.015	0.190	Zinc (Zn), EDTA

PRODUCT CHARACTERISTICS

Packaging	: 1 x 10 liter
Product code	: 3169.03.10GA
pH	: 6.5
EC (mS/cm) at 1 g/l	: 0.85
Density (at 25°C), g/ml	: 1.31

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Fruiting vegetables	3-6	1 week after planting, before and after flowering – 2-3 times
Leafy vegetables, Brassicas, Cauliflower, Broccoli	3-6	After planting, 1-2 times
Onion / Garlic	3-6	At 2-3 leaves, 1-2 times
Soft fruits, Orchards, Vineyards	3-6	Before flowering and 2 weeks before harvest, 1-2 times
Corn	3-6	At 4-6 leaves
Oil seed rape	3-6	Autumn or early Spring
Potato	3-6	Before tuber initiation, 1-2 times
Ornamentals	2-3	1 week after potting or emergence and before flowering, 1-2 times

Agroleaf[®] Liquid

High K
8-8-16+TE



Agroleaf Liquid High K

is a high quality liquid foliar fertilizer especially designed for preventing and/or correcting potassium deficiency. The product is enriched with a consistent package of chelated trace elements.

Besides pure and high quality nutrients, Agroleaf Liquid High K will increase fruit size and intensify their color. Its efficiency is improved by the **F3 SurfActive technology** and the specific package of chelated trace-elements.

Non-ionic surfactants, embedded in F3 SurfActive technology, are directly responsible for the efficiency of the sprayed solution. HEEDTA chelated form of iron increases product flexibility to be used in wider pH range of spray solution.

GUARANTEED ANALYSES

w/w g/l

8	108.8	TOTAL NITROGEN (N) 8% Urea-N (N-NH_2)
8	108.8	PHOSPHORUS PENTOXIDE (P_2O_5) , water soluble 3.49% Phosphorus (P)
16	217.6	POTASSIUM OXIDE (K_2O) , water soluble 13.28% Potassium (K)
0.020	0.254	Boron (B)
0.002	0.025	Copper (Cu) EDTA
0.060	0.762	Iron (Fe), HEEDTA
0.030	0.381	Manganese (Mn), EDTA
0.001	0.012	Molybdenum (Mo)
0.015	0.190	Zinc (Zn), EDTA

PRODUCT CHARACTERISTICS

Packaging	: 1 x 10 liter
Product code	: 3166.03.10GA
pH	: 6.5
EC (mS/cm) at 1 g/l	: 0.74
Density (at 25°C), g/ml	: 1.36

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Fruiting vegetables	5-10	Fruit set-Harvest, 4-5 times
Salads, Cabbages	3-5	After head formation, 2-3 times
Onion / Garlic	3-6	At bulb enlargement, 1-2 times
Soft fruits, Orchards, Vineyards	5-10	Fruit set - 2 weeks before harvest, 4-5 times
Sunflower	3-6	Beginning of flowering
Oil seed rape	3-6	Beginning of flowering
Potato	3-6	Tuber growth, 2-3 times
Ornamentals	2-3	Before and after flowering, 1-2 times

Agroleaf[®] Liquid

MolyB
4-16-4+0.1B+2Mo



Agroleaf Liquid MolyB

is a high quality NPK liquid foliar fertilizer enriched with boron and with high concentration of molybdenum.

It has been formulated for crops with high demand of these trace elements, boron and molybdenum, as well as a fast solution to correct their deficiencies. Molybdenum is an essential component in two enzymes that convert ammonia into nitrite and then into nitrate before it is used to synthesize amino acids within the plant. It's also needed by symbiotic nitrogen-fixing bacteria in legumes to fix atmospheric nitrogen. Plants also use molybdenum to convert inorganic phosphorus into organic forms in the plant. Its efficiency is improved by the **F3 SurfActive technology**.

Non-ionic surfactants, embedded in F3 SurfActive technology, are directly responsible for the efficiency of the sprayed solution.

GUARANTEED ANALYSES

w/w g/l

4	49.2	TOTAL NITROGEN 1.4% Urea-N (N-NH_2) 2.6% Ammoniacal-N (N-NH_4)
16	196.8	PHOSPHORUS PETOXIDE (P_2O_5) water soluble 6.98% Phosphorus (P)
4	49.2	POTASSIUM OXIDE (K_2O) water soluble 3.32 Potassium (K)
0.1	1.23	Boron (B)
2	24.6	Molybdenum (Mo)

PRODUCT CHARACTERISTICS

Packaging	: 1 x 10 liter
Product code	: 3162.03.10GA
pH	: 5.2
EC (mS/cm) at 1 g/l	: 0.49
Density (at 25°C), g/ml	: 1.23

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Fruiting vegetables, Potato	0.5-1	During the entire crop cycle. For open field grown crops - after the row closure
Legumes (soy beans)	1- 2	At 6 leaves
Cabbage, Cauliflower, Broccoli	1-3	From 6-8 leaves, 2-3 times
Oil seed rape	0.5-1 1-2	In Autumn In Spring, till flowering, 2 times
Sunflower	1-3	At 4-6 leaves
Sugarbeet	1-3	At 6-8 leaves
Pasture	0.5-1	During the entire crop cycle, 2-3 times

Agroleaf[®] Liquid

Magnesium
10% MgO



Agroleaf Liquid Magnesium

is a high quality liquid foliar fertilizer especially created to prevent and control magnesium deficiency. It has been formulated to be widely used in all types of crops. Its efficiency is improved by the **F3 SurfActive technology**.

Magnesium is the central part of the chlorophyll molecule, playing a key role in photosynthesis. It increases iron utilization and act as carrier of phosphorus in the plant. It is both an enzyme-activator and constituent of many enzymes.

GUARANTEED ANALYSES

w/w g/l

7 95.9 Total Nitrogen
7% Nitric -N (N-NO₃)

10 137 Magnesium Oxide (MgO)
6% Magnesium (Mg)

PRODUCT CHARACTERISTICS

Packaging : 1 x 10 liter
Product code : 3161.03.10GA
pH : 5.1
EC (mS/cm) at 1 g/l : 0.87
Density (at 25°C), g/ml : 1.37

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Vegetables, in general	3-6	During the entire crop cycle, 3-4 times
Potato	3-6	After flowering, 2-3 times
Onion / Garlic	3-6	After 5-6 leaves, 2-3 times
Soft fruits, Orchards, Vineyards	3-6	From fruit set - harvest , 3-4 times
Cereals	3-6	2 nd internode – flag leaf
Corn	3-6	At 8-10 leaves
Oil seed rape	3-6	Spring till flowering

Agroleaf[®] Liquid

Manganese
6% Mn



Agroleaf Liquid Manganese

is a high quality liquid foliar fertilizer especially created to prevent and control manganese deficiency. Agroleaf Liquid Manganese is a Na free product. It has been formulated to be widely used in all types of crops. Its efficiency is improved by the **F3 SurfActive technology**.

Manganese plays a key role in the photosynthetic activity of the plant. It is directly involved in increasing the dry matter content and contributes to abiotic stress tolerance.

GUARANTEED ANALYSES

w/w	g/l	
6	78	Manganese (Mn)
6% Mn-EDTA chelated		

PRODUCT CHARACTERISTICS

Packaging	: 1 x 10 liter
Product code	: 3160.03.10GA
pH	: 5.6
EC (mS/cm) at 1 g/l	: 0.3
Density (at 25°C), g/ml	: 1.3

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Fruiting vegetables	1-2	During the entire crop cycle, 3-4 times
Potato	1-2	Beginning of row closure, 2-3 times
Oil seed rape	1-2	Spring till flowering
Corn	1-2	At 4-6 leaves
Cereals	1-2	Early in Spring
Sugarbeet	1-2	At 6-8 leaves
Soft fruits, Orchards, Vineyards	2-3	From fruit set - harvest , 3-4 times

Agroleaf[®] Liquid

Zinc
8% Zn



Agroleaf Liquid Zinc

is a high quality liquid foliar fertilizer especially created to prevent and control zinc deficiency. Agroleaf Liquid Zinc is a Na free product. It has been formulated to be widely used in all types of crops. Its efficiency is improved by the **F3 SurfActive technology**.

Zinc is a key micronutrient for the plants to obtain high yields. It's involved in the auxin formation, protein and chlorophyll synthesis. It helps root development and starch formation.

GUARANTEED ANALYSES

w/w g/l
8 110.4 Zinc (Zn)
8% Zn-EDTA chelated

PRODUCT CHARACTERISTICS

Packaging : 1 x 10 liter
Product code : 3147.03.10GA
pH : 6.3
EC (mS/cm) at 1 g/l : 0.37
Density (at 25°C), g/ml : 1.38

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Fruiting vegetables	1-3	During the entire crop cycle, 3-4 times
Potato	2-3	Before and after flowering
Sunflower	2-3	At 4-6 leaves
Corn	2-3	At 4-6 leaves
Cereals	1-2	Early in spring
Strawberry	2-3	Flower bud and after flowering
Soft fruits, Orchards, Vineyards	3-5	From fruit set - harvest , 3-4 times

Agroleaf[®] Liquid

Iron
4.4% Fe



Agroleaf Liquid Iron

is a high quality liquid foliar fertilizer especially created to prevent and control iron deficiency. It has been formulated to be widely used in all types of crops. Its efficiency is improved by the **F3 SurfActive technology**.

Iron is essential for proteins and chlorophyll synthesis. It is an important factor in many enzymes, associated with energy transfer and respiratory systems, as well as for nitrogen reduction and fixation.

GUARANTEED ANALYSES

w/w g/l

4.4 52.3 Iron (Fe)
4.4% Fe-EDTA chelated

PRODUCT CHARACTERISTICS

Packaging : 1 x 10 liter
Product code : 3168.03.10GA
pH : 5.5
EC (mS/cm) at 1 g/l : 0.16
Density (at 25°C), g/ml : 1.19

CROP RECOMMENDATIONS	DOSAGE, LTR/HA	TIMING
Fruiting vegetables	3-6	During the entire crop cycle, 3-4 times
Strawberry	3-6	During the entire crop cycle, 3-4 times
Blueberry	3-6	During the entire crop cycle, 3-4 times
Other soft fruits	3-6	During the entire crop cycle, 3-4 times
	5-8	For curative applications
Orchards	3-5	During the entire crop cycle, 3-4 times
	5-7	For curative applications
Vineyards	3-5	During the entire crop cycle, 3-4 times
	5-7	For curative applications
Ornamentals	2-3	During the entire crop cycle, 3-4 times



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Everris International B.V. Heerlen is also certified according ISO - 14001 and OHSAS - 18001.
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ICL Specialty Fertilizers