



EASY ATS

Ammonium Thiosulfate (ATS) Solution Soil Applied Liquid Sulfur Fertiliser

%N	%P	%K	%S
16	0	0	34



WARNING



Harmful if inhaled.

Classified as Hazardous according to Safe Work Australia criteria.

SAFETY DIRECTIONS/FIRST AID

Do not swallow.

Avoid ingestion and the inhalation of spray or mist.

Avoid contact with eyes or skin. Wash hands after use.

If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing.
Call the Poisons Information Centre (131 126), or a doctor, if you feel unwell.

ANALYSIS (Weight/Volume)

Nutrients

- 16 % Nitrogen (N) w/v as ammonium (160 g/L N)
- 34 % Sulfur (S) w/v as thiosulfate (S₂O₃) (340 g/L S)

Impurities

- Cadmium (Cd) 1 mg/kg Cd (max)
- Lead (Pb) 1 mg/kg Pb (max)
- Mercury (Hg) 0.2 mg/kg Hg (max)

Specific Gravity

EASY ATS has a specific gravity at 20⁰ C of 1.325. This gives EASY ATS an analysis on a weight/weight basis of:

- 12 % Nitrogen (N) w/w (120 g/kg N)
- 25.7 % Sulfur (S) w/w (257 g/kg S).

EASY ATS

EASY ATS is a clear colourless solution of ammonium thiosulfate (ATS), which has the chemical formula of (NH₄)₂S₂O₃. It has a pH of 8.5 – 9.5. At 34 % w/v S, EASY ATS contains a higher concentration of sulfur (S) than can be obtained by dissolving soluble solid fertilisers in water. It also supplies nitrogen (16 % w/v N), but in smaller amounts than sulfur.

On application to the soil, ammonium thiosulfate decomposes to form sulfate and elemental sulfur, approximately equal amounts of each. Plants take up sulfur as sulfate, so this part is immediately available for root uptake. The elemental sulfur has a fine particle size, and becomes available once it is oxidised by soil bacteria to the sulfate form. This gives a slow release effect over several weeks, depending on prevailing soil and weather conditions.

EASY ATS can be applied or injected into the soil in a variety of ways, provided it is not placed in direct contact with crop seeds or the roots of transplants, as it will burn the roots. In fertigation programs, EASY ATS can be applied on its own or mixed with EASY N to provide nitrogen and sulfur in the desired amounts. Plants take up about ten times more nitrogen than sulfur.

EASY ATS is toxic to foliage and crop roots. It should not be used in foliar sprays, applied in direct contact with crop seeds or the roots of transplants, or be used in hydroponic solutions. Accidental foliar burn, e.g. from drift, is most likely to occur when the temperature is high and/or humidity is low.

Pre-plant application in Annual Crops ✓

Spray onto the soil surface, 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 off-set to the side of the intended position of the row.

Planting ✓

Apply between the rows; or behind non-seeding tines. If applied behind seeding tines, ensure the fertiliser does not come in contact with the seed or planting material, e.g. band 5 cm to the side of and 5 cm below the seed or transplants in row crops.

Top-dressing ✗

Top-dressing pasture and crops planted at narrow row spacings with EASY ATS is **not** recommended as spray left on the foliage may burn the leaves.

Side-dressing ✓

In row crops, apply the fertiliser to the side of the rows, either to the soil surface or place into the soil. Avoid leaf wetting. If injected into the soil, apply far enough to the side of the rows to avoid root pruning and fertiliser burn to the crop roots.

Avoid application in the centre of the inter-row space where utilization of fertiliser will tend to be poor given the distance the plants roots have to grow to reach it. In addition, the soil is more likely to be compacted and water-logging is more likely to occur in this area.

Trees and Vines ✓

Inject into the soil, or direct the spray at the soil. Apply in a broad band under the edge of the canopy or along the hedge-row (as for other soil-applied fertilisers). Avoid spray drift onto the foliage or bark.

Note: EASY ATS may also be applied through the irrigation water, e.g. under-tree sprinklers or drip/trickle irrigation systems.

Turf ✗ ✓

EASY ATS should be applied to turf through the irrigation water. This dilutes the fertiliser, and washes most of it from the leaves. If applied by boom, it may burn the grass.

Fertigation ✓

The use of Liquids such as EASY ATS allows fertiliser solutions to be injected directly into irrigation lines without prior mixing in water. This avoids the need for bag handling and dissolving solid fertilisers on farm.

EASY ATS can be applied through all types of irrigation systems, including overhead sprinklers. With fixed line overhead sprinkler systems, inject the fertiliser into the fertiliser lines over a reasonable period of time, e.g. mid third of the shift, leaving the last third to flush the lines and wash any fertiliser solution from the leaves.

With travelling irrigators, this will not be possible, but given the dilution that occurs when the EASY ATS fertiliser solution is being injected continuously, foliar burn is unlikely to occur.

Hydroponics ✗

EASY ATS is not recommended for hydroponic solutions. It may burn plant roots, and not all the sulfur is in the immediately available sulfate form.

Foliar Fertilisation ✗

Do not apply EASY ATS by mister or boom-spray, as the fertiliser solution will burn the plant foliage.

APPLICATION RATES AND TIMING

Application rates will be dictated by the sulfur requirements of the crop or pasture.

Cereal grain crops may require no more than 15 – 45 L/ha (5 – 15 kg/ha S), legume grain crops 30 – 60 L/ha (10 – 20 kg/ha S), and canola 60 – 90 L/ha (20 – 30 kg/ha S) per annum (crop).

Typical application rates in horticulture and sugarcane are 60 – 75 L/ha (20 – 25 kg/ha S).

Where liquid fertilisers such as EASY ATS are applied in horticultural crops, it is customary to split the seasonal fertiliser needs into a number of smaller applications, e.g. three or four applications at 20 L/ha applied through the irrigation water.

Usually, other nutrients, e.g. nitrogen (N) will need to be applied simultaneously with sulfur (S). As plants take up much greater amounts of nitrogen than they do sulfur, EASY ATS can be mixed with EASY N (UAN solution) to give the desired N:S ratio, e.g. to achieve a N:S ratio of 10:1, mix one litre of EASY ATS with 7.6 litres of EASY N.

Agritopics on “Sulfur” and “Fertigation” are available if required, and should be read in conjunction with these “Use Directions”.

COMPATIBILITY

With Other Fertilisers

EASY ATS is compatible with many slightly acidic to alkaline liquid fertilisers, but should not be mixed with acidic fertilisers. The pH of the final solution should be maintained above 6.0 to prevent elemental sulfur dropping out of the solution as a yellow precipitate.

- **EASY N, EASY NP and EASY PK:** EASY ATS is compatible with these products.
- **EASY KS:** EASY ATS is also compatible with EASY KS (potassium thiosulfate solution) although it is unlikely there will be a need to mix the two products, or use both of them in other mixtures.
- **EASY Cal:** EASY ATS is incompatible with and should not be mixed with EASY Cal.

With Crop Protectants

EASY ATS is compatible with various knockdown and soil-applied residual herbicides. Before application, however, the label of the crop protection product should be checked for specific advice, and the products should only be mixed if it is safe to do so.

EASY ATS should **not** be applied with selective post-emergent herbicides, insecticides or fungicides as the EASY ATS itself is toxic to foliage.

DELIVERY

EASY ATS is available for internal use at IPF and is currently not sold through agents or dealers.

STORAGE

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

CORROSIVITY AND CARE OF EQUIPMENT

Fertilisers can be corrosive to metals. Flush application and fertigation equipment after use.

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

As EASY ATS is likely to be used in combination with EASY N (UAN solution), or if it isn't at present, may be in the future, it is recommended that equipment used on farm to store, distribute and apply EASY ATS be of a similar standard to that used for EASY N.

Refer to the EASY N Use Directions for further details.

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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