

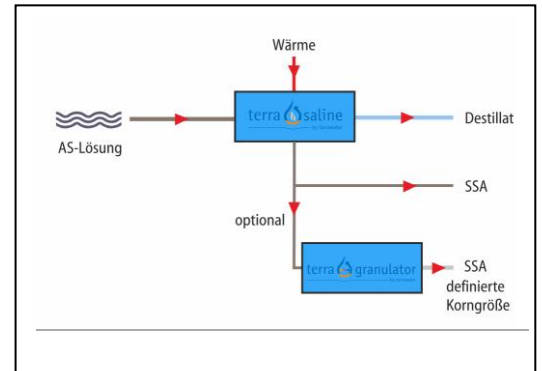
Technology for N recovery as ammonium sulphate from recovered ammonia sulphate solutions by “TerraSaline S (ASL)” water extraction



Ammonium Sulphate production • N-recovery • defined corn • modular

Key facts:

- **Category of the technology:** Physical-Chemical nitrogen recovery from manure, digestate and wastewater - Physical separation
- **Input material:** Ammonia Sulphate Solution (ASL) of any concentration, for example from digestate; manure recovery other streams. External heat is needed.
- **Output products:** Ammonium sulphate (N-fertilizer 21%N, 24%S added with lime)
- **Available capacity:** 3 m³ ASL per day, modular
- Focusing geographical area: EU28
- **Technologystatus:** available on the market
- **EC/MS authority permits:** regional building permit, industrial pollution control regulation and water directives
- **Geographical area:** EU 28
- **Price range:** starting with 220.000,- €



Summary of technology:

TerraSaline S (ASL) is an innovative technology for producing ammonium sulphate out of any ASL.

The TerraSaline S (ASL) consists of a humidification / dehumidification section, where the ASL is concentrated until the salt (ammonium sulphate) falls out. This wet ammonium sulphate is then dried in the drying section and can be either packed into an integrated bigbag unit or transported to the optional TerraGranulator. A big bag packaging system is also integrated in the container.

Main characteristics:

- Input material: ASL (Ammonium sulphate solution) of any concentration
- Output fertilizer: Ammonium Sulphate: 21%N, 24%S, optional added with lime
- Produce defined fertilizer out of undefined ASL
- Producing a qualified defined fertilizer (Corn size: 3 to 8 mm)
- Reducing the needed storage capacity for liquid N-fertilizer (ASL)
- Environmentally friendly product
- Product able to be packed in bigbag
- External heat from a biogas plant or similar
- Modular system to adjust to needed size



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Competitive Position and Advantage:

This technology converts ammonium sulfate solution to a defined granulated fertilizer product. This means that the nitrogen fractions resulting from the treatment of liquid manure or digestate residues can be used in a much broader and more targeted manner. The fertilizer can be easily stored in big bags or in bulk. The fertilizer is applicable with conventional fertilizer spreading technology.

Terrawater's “TerraSaline S (ASL)” allows to produce a nitrogen fertilizer out of natural resources like digestate, manure or similar. So, the need of buying mineral fertilizer is reduced. At least, the system helps to close the cycle of nutrients in a region.

Having an ammonium sulphate solution, you receive:

- > a high quality N-fertilizer based on natural resources
- > a defined corn size for use in standard fertilizer spreader
- > a product, packed in big bags, easy to store and to transport
- > a modular system, easy to expand to bigger volumes

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