

AMMONIUMNITRATE FROM LIQUID FRACTION OF MANURE, DIGESTATE OR OTHER WASTE STREAM BY “DETRICON” PROCESS



Keywords: liquid nitrogen fertilizer, ammoniumnitrate, nutrient recovery

Key facts:

- **Product Category:** liquid inorganic fertilizer
- **Production process:** Nutrient recovery from liquid waste streams with more than 0,1% ammonia nitrogen using Detricon stripping/scrubbing technology (patent pending).
- **Nutrient Content (N-P-K %):** 18 – 0 – 0 or 10 – 0 – 0
- **Product status:** available on the market
- **Limitation of application:** spraying can give leaf damage
- **Geographical area:** Belgium
- **Price range:** 0,65-0,75 euro/kg N



Summary:

PRODUCTION PROCESS

Ammonium (NH_4^+), present in manure and digestate, is in balance with ammonia (NH_3), which is volatile. Under the influence of pH and temperature, the ratio of ammonia to ammonium can be increased so that the ammonia nitrogen can volatilize more quickly. By blowing in air, the volatile ammonia is removed from the liquid fraction and the nitrogen (N) can be recovered. The air from the stripper, enriched with ammonia, is chemically bound to nitric acid in the scrubber into ammonium nitrate. The concentration of ammonium nitrate is determined by the initial amount of water in the scrubber and the amount of nitric acid added during the production process. In the Detricon process the concentration is set to 52 mass% ammonium nitrate which corresponds to 18 mass% N. After the ammonia in the scrubber is chemically bound, the ammonia-poor (<20 ppm NH_3) air goes back to the stripper.

APPLICATION

Using ammonium nitrate in gardens and large scale agricultural fields enhances plant growth and provides a ready supply of nitrogen from which plants can grow.

How to use:

- **Type of farming:** conventional
- **Cultivation methods:** open field or greenhouse
- **Recommended crops:** corn, grass, vegetables
- **Application doses:** 0,5-1 t/ha

Contact

Name: Denis De Wilde

Company: Detricon

Web: www.detricon.eu

e-mail: denis@detricon.eu

AMMONIUMNITRATE FROM LIQUID FRACTION OF MANURE, DIGESTATE OR OTHER WASTE STREAM BY “DETRICON” PROCESS



Key product features:

- Liquid ammonium nitrate
- 10 or 18 mass% of nitrogen
- 50/50 ammonia and nitrate
- A clear and technical pure solution
- Colourless to pale pink solution

Key product benefits:

- Liquid fertilizer for precision fertilisation
- Liquid fertilizer suitable for replacing mineral fertilizer
- Technical pure
- Odourless
- Free of organic components

Competitive position and advantages:

- An energy efficient and economic interesting technology to produce locally a pure nitrogen fertilizer without other nutrients.
- Ammonia nitrogen from waste streams is recovered in a valuable end product. An example of circular economy.