

ADVANCETM DESIGN

THERMAL TREATMENT

Stamicarbon's unique proprietary solution to design urea melt plants with zero ammonia emission in an environmental and cost friendly way.

The innovation & license company
of Maire Tecnimont.





ADVANCE™ DESIGN

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The challenge

- Reduce the ecological footprint of the urea melt plant.
- Reduce the ammonia emission from the urea melt plant.
- Reduce nuisance of ammonia emission in the vicinity of the plant.

In most cases, the continuous ammonia emission sources in a modern CO₂ stripping melt process are limited to:

- Vent gases from the absorbers.
- Breathing system of the atmospheric storage tanks.

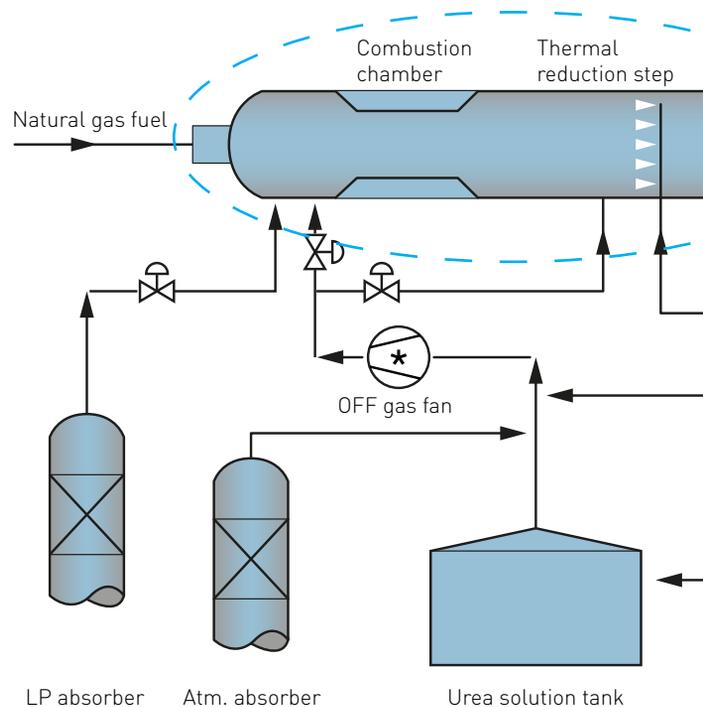
Stamicarbon's solution

Stamicarbon's ADVANCE DESIGN™ Thermal Treatment consumes the remaining combustibles in the off-gas and adds support gas, if needed, to allow full incineration of the vented ammonia vapors from the urea melt plant. The waste heat is recovered by steam generation, which is beneficial in e.g. the stripper of the urea melt plant. Any NO_x formed in the process is treated by means of thermal and catalytic DeNO_x. The result is a urea melt plant with zero ammonia emission without any need for an environmentally unfriendly and costly flare.

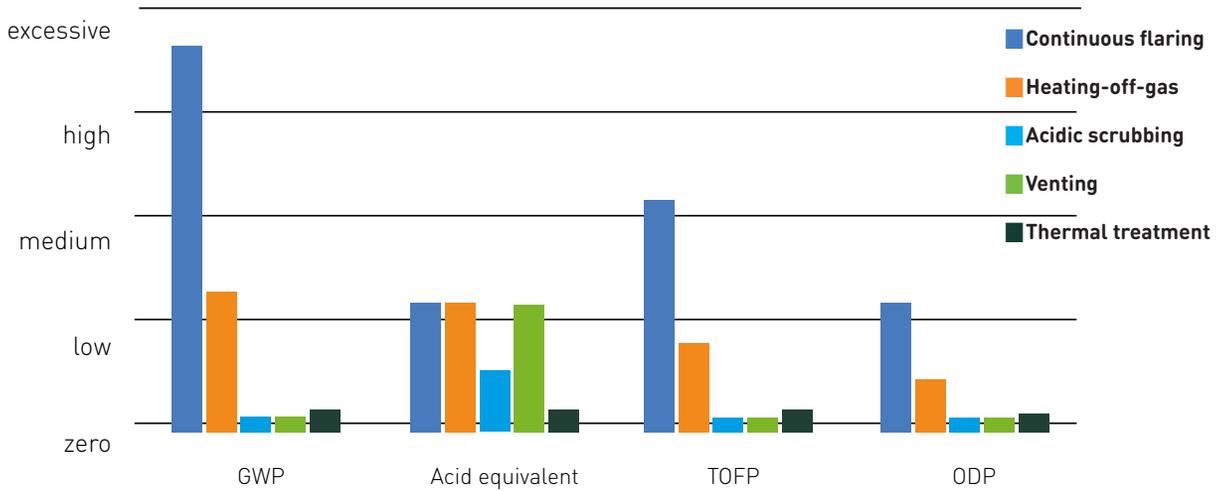
The stand-alone ADVANCE DESIGN™ Thermal Treatment unit can be located next to the urea plant to treat all continuous off-gases. Depending on site conditions, it can be situated on a plot starting from 4 x 4 meters with minimum tie-ins. It is available as a skid-mounted packaged unit for logistical flexibility and simple erection.

Unique benefits:

- Most environmental friendly solution for off-gas treatment in the urea melt plant
- Lowest emissions available for a urea melt plant with guaranteed low NH₃ and NO_x emission (expected NH₃ emission of < 5 ppm)
- Complementary MP steam generation, typical 1 – 2 tons per hour up to 20 bar
- Low CAPEX and OPEX with return on investment
- No nitrogen consumption
- Suitable for all plants of any process license
- Small foot print at ground level
- Minimum gas consumption and a fraction compared to flaring



Environmental impact of off-gas treatment



GWP: Global Warning Potential
 TOFP: Tropospheric Ozone Forming Potential
 ODP: Ozone Depletion Potential

