



Institute of Nanoscience and Nanotechnology

Materials and Membranes for Environmental Separations Laboratory

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Preliminary absorption results for ammonia (NH₃) and hydrogen sulfide (H₂S) gases of ICHEMAID Nod 1E product

Product's absorption capacity was evaluated in a laboratory empty glass column, with height to diameter ratio >10 and total volume of approximately 135 cm³.

The liquid absorbent was sprayed through a plastic sprinkler having 2 x 0.5mm holes. Volumetric flow for all experiments was constant at 34 ml·min⁻¹.

NH₃ & H₂S experimental conditions:

A) Gas mixture consisting of NH₃ in He having ~80,000 ppm concentration was introduced into the column with ~ 140 ml·min⁻¹ flowrate.

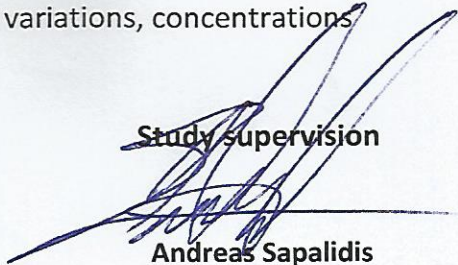
NH₃ concentration was measured in the inlet and outlet of the column with the aid of a TCD detector in a GC. Under stable experimental conditions the outlet NH₃ concentration was measured <500 ppm, resulting in > **99.5%** absorption capacity of

B) Gas mixture consisting of H₂S in N₂ having ~13 ppm concentration was introduced into the column with ~ 380 ml·min⁻¹ flowrate.

The H₂S's column outlet concentration was measured with the aid of a portable Drager analyzer and under stable experimental conditions was measured < 0.5 ppm, resulting in > **96.5%** absorption capacity

It is noted that the abovementioned results have to do with the specific experimental conditions. Final absorption capacity results will be obtained during the detailed study which will take into account various parameters (e.g. contact time, flow rates, temperature variations, concentrations etc), following standard laboratory practices.

Study supervision



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