

“Improved Equipment Design for Phosphoric Acid Concentration Loops and Defluorination Systems”

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Bio:

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Abstract:

Most processes produce phosphoric acid from phosphate rock at an output concentration of 27-30 wt% in P₂O₅.

For downstream processing the required phosphoric acid feed concentration is usually higher, e.g. fertilizer industry requires up to 40 to 55 wt% in P₂O₅.

Typically this concentration is done via a forced circulation evaporation loop under vacuum conditions. As the phosphate rock contains always scaling agents this step is suffering by heavy scaling. Production cycles, maintenance and cleaning time are of most importance for the production performance. In case purified acid is required an acid purification, reconcentration and defluorination step follows the concentration step.

Corrosion resistance technologies and optimum equipment and process design is for all of above mentioned a key factor to achieve excellent results.

This presentation focuses on the optimal design of phosphoric acid concentration loop, defluorination system, for which improved equipment design are required to ensure superior product quality and higher production rate. It will compare it to alternative equipment and system in respect of reliable operation and economic considerations.