

Chemical Recovery Application

Sodium Thiosulphate – Sodium Formate Separation

A Chemical Manufacturer sought to recover sodium formate from an aqueous effluent stream containing 18% w/v sodium formate and 2% w/v sodium thiosulphate. The recovered sodium formate can be re-used in the process, however sodium thiosulphate is a poison to the process catalyst and must be reduced to ppm levels if the recovered sodium formate is to be re-used.

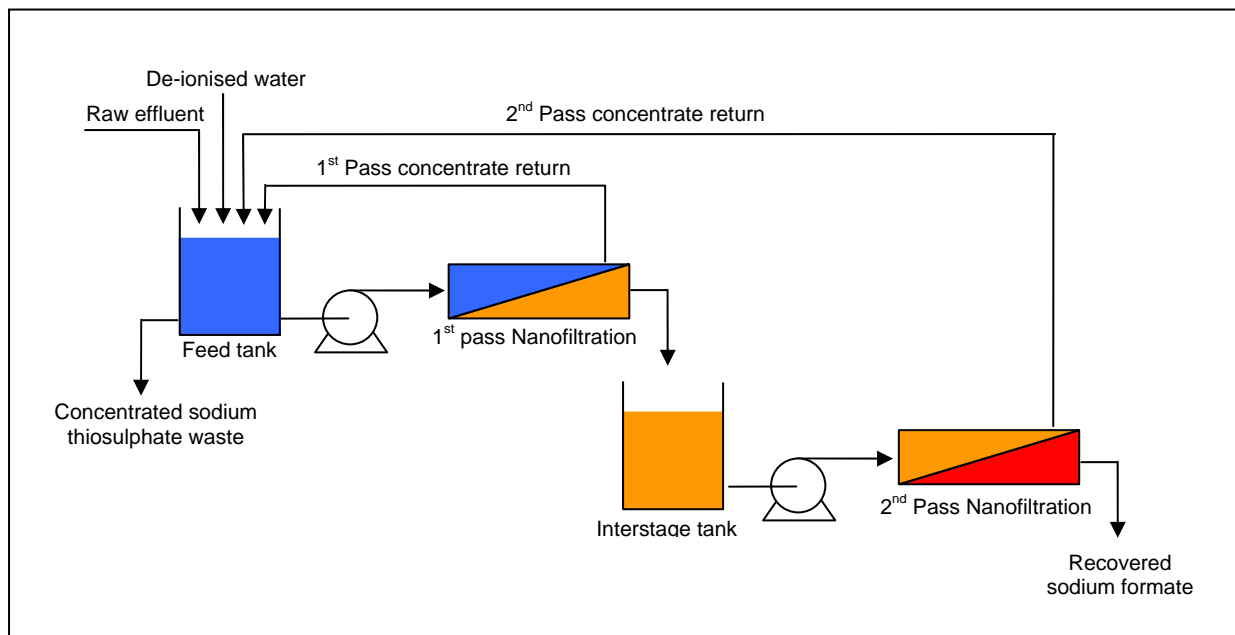
Nanofiltration Membrane Separation

A nanofiltration membrane allows sodium formate to pass through it into the treated water stream (permeate) whilst rejecting sodium thiosulphate, which is retained in a 'concentrate' stream. Thus sodium formate can be recovered virtually free of sodium thiosulphate contamination.

Sodium Thiosulphate Sodium Formate Separation Plant

A two pass nanofiltration process with diafiltration maximises sodium formate recovery and minimises sodium thiosulphate passage into the recovered product. Benefits are:

- Average > 99% rejection of sodium thiosulphate
- More than 99% passage of sodium formate
- Translates to almost 99% net recovery of the sodium formate, with less than 5 mg/l sodium thiosulphate contamination



Schematic of two pass, filtration and diafiltration separation process