

Chemical Recovery Application

Acetic Acid Recovery from Aqueous Effluent

A BP chemicals site was faced with the treatment of an aqueous effluent for the removal of Acetic Acid before discharge from site.

Reverse Osmosis Membrane Separation

Reverse Osmosis was proposed for the separation and recovery of the Acetic Acid using Osmonics membrane technology. The thin film composite polyamide membrane rejects Acetic Acid, whilst allowing water to pass through it, producing a treated water (permeate) stream and a concentrated acetic acid (concentrate) stream. This provides scope for re-using the recovered acid and treated water streams back in the site processes.

Acetic Acid Recovery Plant

The Esmil Acetic Acid Recovery design uses proven membrane technology to provide the following benefits:

- 90-95% permeate recovery
- 95% acetic acid rejection below 20°C
- Robust and reliable, automated plant.
- No chemical dosing requirement

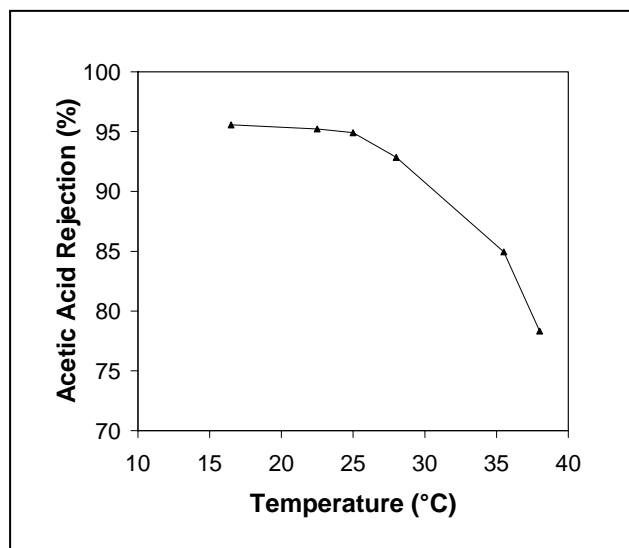


Figure 1. Acetic acid rejection as a function of temperature

Process Outputs

1. **Permeate** (90 to 95% of feed flow), recovered water for use on site.
2. **Concentrate** (5 to 10% of feed flow), acetic acid concentrate recovered for re-use.