CASE STUDY | ***CHEMICAL INDUSTRY***

PPM RESIDUAL SOLVENT CONTENT

LCI
Part of the Nederman Group

Chemical Industry |

Country: *United States*

Key Benefits: *Tars & Resins Devolatilization*

Products: *LCI Vertical Thin Film Evaporator*

Background:

LCI Corporation's agitated thin film evaporator devolatilized tar from 20% to <500ppm residual solvent content in a single pass. Low solvent content acheived, resulted in a 100% increase in product value.

12m² LCI Vertical Thin Film Evaporator Skid System – Evaporator Model LCSI-1200

Problem:

Client was working to develop a novel process for recycling a tar feedstock. Product needed to meet ppm residual solvent content requirements & maintain performance characteristics. Increase viscosity of final product presented handling challenges for other evaporator types.

LCI Solution:

Testing: Client tested at LCI's Charlotte, NC pilot facility. From test data, LCI was able to prove concentration of the product, generate qualification samples for investors & scale up to a production size evaporator.

Process Design: Counter–current evaporators effectively complete a multi-stage flash evaporation in a single unit. For low residual, difficult separations, nitrogen sparging within the evaporator was used to lower the partial pressure of the volatile component allowing for enhanced stripping.

Fixed clearance thin film rotors are capable of processing applications with viscosities <50,000cP. High viscosity rotors provide positive transport for viscous materials which do not flow by gravity – 50,000 to 10 million cP.

End Results:

The qualification trials were successful. The LCI evaporator exceeded expectations & removed solvent content well below the required ppm threshold, allowing for a robust process & additional product value. The Client is looking at duplicating the entire process at other locations.