

How Everest vacuum is continuously working with its customers to increase their operational efficiency. Lean How Everest vacuum worked with one of the customers to help them reduce & save more than 25 Lacs/Year & increase plant productivity by more than 22%.



CUSTOMER: (CRR 642)

GFL LTD, Dahej, Gujrat (INDIA)

SECTOR : Fluorochemicals

Gujarat Fluorochemicals Limited is India's largest producer of Chloromethanes, Refrigerants and Polytetrafluoroethylene.

PROCESS BRIEF:

PROCESS : DISTILLATION under Vacuum.

PRODUCT : MonoChlorobenzene and Sulfolene

PUMPING : 1000m³/hr.

VACUUM : 5 TORR.

**PROBLEM STATEMENT: (Challenges)**

- 1) Use of WET vacuum systems, typically a Steam Jet Ejector System which caused generation of excessive effluent which needed to be disposed of/ treated leading to additional cost of effluent treatment.
- 2) Mixing of solvent with motive steam/water leading to frequent problems of vacuum fluctuation which resulted in inconsistent product quality.
- 3) Identification of generation of Ammonium Chloride as a byproduct which was earlier unknown by the production/process team at ground as it was not mentioned in their initial RFQ. Since this was getting mixed with other streams of effluent being generated & collected commonly it was getting missed & led to pump choking. This problem was also addressed by use of appropriate safety accessories installed by Everest at site.

PROBLEM SOLVING: (Solution)

- 1) Conversion of WET SYSTEM to 100% DRY VACUUM PUMPING by installing our SUPERVAC 1200 system restricting/eliminating any effluent being generated thus saving huge cost for customers in terms of effluent treatment.
- 2) More than 95% recovery of Solvent at the discharge of vacuum system by use of POST CONDENSER at the discharge of the vacuum pump leading to high cost being saved by the customer in terms of re-use of the clean solvent post pump recovery.
- 3) A suitable pre-scrubber designed & installed by EVEREST pre vacuum system to arrest any excessive vapour/process contaminant from entering into the vacuum system.
- 4) Consistent & good quality vacuum level throughout the process as high efficiency dry vacuum systems are deployed.

EQUIPMENT SUPPLIED: SuperVac 1000 with Pre & Post Condenser.



ADVANTAGES & BENEFITS: (Outcomes)

- 1) Drastic reduction in utility cost as NO STEAM consumption & Cooling Water consumption reduced by more than 80%. Approximate saving of 16.5Lakhs/yr in steam cost.
- 2) Consistent & clean vacuum leading to
 - a) Enhanced product quality.
 - b) Cycle time reduced from 22 hrs to 18 hrs. (22% Saving)
 - c) Lower overall distillation temperature.
- 3) Elimination of effluent treatment cost, approximate at XXXX saving.
- 4) Solvent recovery in post condenser, approximately 30 ltr/batch, saving about 4.0lac/yr.
- 5) High ROI on investment & great benefits as 100% DRY TECHNOLOGY.
- 6) Low/No Lag in Startup/Shut Down in Dry pumping as opposed to WET pumping which is dependent on boiler steam generation.

