

CONCENTRATING AGROCHEMICAL PRODUCTS



Agrochemical |

Country: United States

Key Benefits: Concentration of several temperature sensitive products, low residence time

Products: 25m² Thin-Film Evaporator – Model LVSI-2500 with major components

Background:

Client purchased a line of crop protection products from another company. After an agreed upon tolling period with the original company, the Client was asked tasked with building their own production facility. The previous location utilized short path evaporation for the concentration process step.



25m² LCI Thin Film Evaporator

Problem:

The Client was looking for process improvements for its new facility. Short path technology was sub-optimal due to entrainment issues at the operating pressure (30-40mmHg) & limitation with the wiper blade design. LCI Corporation's knowledge in thin/wiped film & short path evaporation aided in the solution for the Client & engineering company.

LCI Solution:

LCI Corporation recommended testing at their Charlotte, NC test facility to create representative product samples & generate data for scale up. LCI was then able to determine production-scale equipment, while proving that a vertical, fixed-clearance, thin film evaporator rotor design would be ideal to concentrate proprietary products under vacuum with no thermal degradation or product loss.

LCI engineered a full component system; including the thin film evaporator, vacuum system, condensers, pumps, instrumentation & control valves. P&IDs/PFDs were developed for third party use to properly install, pipe & ready the system for startup. The thin film evaporator & components were designed for multiple products at different feed & concentrate compositions.

End Results:

LCI equipment was installed & commission ensued in late 2014. Equipment is currently operational at specified rates with exceptional product quality. LCI personnel attended pre-startup installation checks & assisted with onsite startup of the equipment.

The feed rates range from 4,000-10,000lb/hr & the evaporation rates from 1,800-6,000lb/hr. The comprehensive scope reduced the Client's vendor management requirements, while utilizing LCI's experience specifying & supplying major components & systems used in part with the LCI thin film evaporator.