Koch Modular
PROCESS SYSTEMS

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Solvent Recovery Increasing Priority in Pharmaceutical Industry

The pharmaceutical industry has largely overlooked the benefits of recovering and recycling solvents on-site, preferring instead to rely on the purchase of virgin solvents or recovery of used solvents off-site, to replenish process-necessary solvents.

Currently, many manufacturers rely on toll processors to perform recovery of solvents. In addition to the transportation hazards, because the toll processor may deal with a number of different materials for different customers, the residue that remains in the equipment could cause cross-contamination.

Other solutions for disposal such as incineration may be less attractive from an environmental standpoint.

There is also an economic downside. Resorting to disposal of used solvents and repurchase of virgin solvents is an expensive process, and many pharmaceutical companies are leaving significant amounts of money on the table.

KOCH MODULAR PROCESS SYSTEMS: A PROVEN TRACK RECORD IN SOLVENT RECYCLING SOLUTIONS

The return on investment (ROI) for designing and installing an on-site solvent recovery unit can show remarkable results.

Case History

According to Tom Schafer, Vice President at Koch Modular Process Systems, the payback period for installing a solvent recovery system can be less than two years.

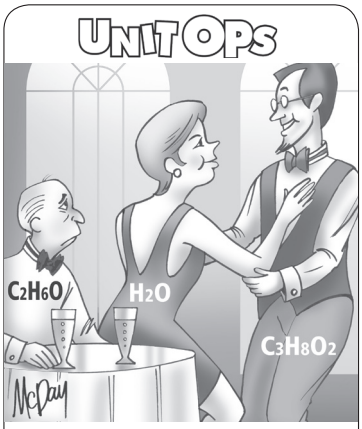
"We built a THF (Tetrahydrofuran) Recovery System for a well-known pharmaceutical company. This system was fed a waste solvent stream that contained water, THF, Dichloromethane, toluene and some salts. There were several azeotropes present, and we needed four small distillation columns to recover the dry THF product."

Schafer went on to explain that the recovered product purity was greater than 99.9 wt% THF. The system recovered 94.1% of the THF that was in the feed.

"The cost of the system installed was $3.8 MM", said Schafer. *"The annual savings from the recovered solvent was $2.2 MM. The operating cost for the system was $200,000 per year in utilities and manpower. The system paid for itself in less than two years."*

Koch Modular solvent recovery units are available as modules, which are typically situated outdoors and have a 12' by 12' footprint. These modules can be manufactured inside, off-site and are ready for installation along a much more expedited timeline than traditional stick-built projects, often in remote locations.

Timelines are expedited and include an engineering study that provides the anticipated results and purity of recovered solvent, which Koch Modular provides in a Process Performance Guarantee.



"Azeotropic romances are the toughest breakups. Ethanol knew he'd lost her to Propylene Glycol long, long ago..."

K-Quips

If you recovered > 99.85 wt% purity Acetronitrile from a waste stream with a $3.7MM cost of the system installed, an annual savings from the recovered solvent of $3.9MM and operating costs for the system of $300,000 per year - how quickly would the system pay for itself?

A. About one year
B. Not economical/never
C. Ten years

For the answer, please visit kochmodular.com/separations-savvy

UPCOMING EVENTS

December 4 - 6
International Conference on CRISPR Technologies

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