

SEPARATIONS SAVVY

ENGINEERED SMARTER. BUILT MODULAR.

The Case of the Fermentation Broth & the Process Performance Guarantee.



The client was a private greenfield biorefining company that converted biomass to renewable chemicals. Challenges were myriad, starting with the puzzle of **extracting acetic acid** from an aqueous fermentation broth that had a propensity to emulsify. Wide ranging acetic acid feed concentrations plus corrosive concentrated carboxylic acids yielded quite a process design puzzle. Could these problems prevent the process from going commercial?

Every puzzle has a solution, if you know where to look.

Koch Modular knows the answers to liquid-liquid extraction puzzles. We designed a modular acetic acid recovery and purification system, using **liquid-liquid extraction**, **distillation** and wastewater stripping as the three essential mass transfer processes. Koch Modular's Houston, TX pilot plant delivered successful pilot plant results, using the **KARR® Column**, a Koch Modular proprietary liquid-liquid extraction technology, proving that we could meet recovery specifications and required production rates.

The reciprocating action of the plate stack internals that are part of the proprietary KARR® Column, solved the puzzle of the emulsification problem.

And then things really got moving!

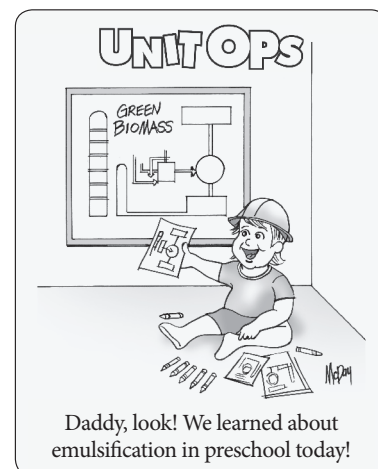
The modules were delivered to the site just 34 weeks after detailed engineering began. Our solvent recovery experience, liquid-liquid extraction technology and **modular construction experience** resulted in a successful start-up that met all performance specifications.

Koch Modular provided a **Process Performance Guarantee**. Based on client-provided production rates and the aforementioned pilot testing, the client's recovery specifications were guaranteed, giving our client the confidence to move decisively.

And they say nothing in life is guaranteed... unless you're working with Koch Modular.

To see this Newsletter and more, please visit modularprocess.com/separations-savvy

To see the full Whitepaper, please visit bit.ly/KMPSFermentationWP



K-Quips

What is the corrosion rate for 316SS in contact with boiling glacial Acetic Acid?

- (A) 0.4 mils/year
- (B) 0.1 mils/year
- (C) 0.9 mils/year
- (D) 67 mils/year

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

UPCOMING EVENTS

Nov. 13-18: 2016 AIChE Annual Meeting (San Francisco, CA)

Dec. 12-14: Joint AIChE/SPE Workshop: Next Generation Deepwater Facilities (Houston, TX)

March 21-23: 2017 Interphex (New York, NY)

March 26-29: 13th Global Congress on Process Safety (San Antonio, TX)

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