

# CMS PERVAPORATION FOR FLOW CHEMISTRY

## CMS MEMBRANES ARE

1

A **simple, compact & efficient** way to turn burdensome waste into usable material

2

Robust to **virtually all** chemicals, high temperatures, harsh pH pressures, and additives

3

**Modular** allowing recovery across a range of volumes

## COMPATIBLE SOLVENTS

- ✓ Alcohols like IPA
- ✓ Ketones like MEK
- ✓ Esters
- ✓ Ethers
- ✓ Furans
- ✓ Benzenes
- ✓ Oils
- ✓ Acetate
- ✓ Ionic Liquids
- ✓ Hexanes
- ✓ Xylene
- ✓ TBHP

## WHY USE MEMBRANES?



Flow Chemistry Scale Up

Drying Past an Azeotrope

On Demand Production of Anhydrous Solvent

Temperature Sensitive API



Increase Capacity

Shorter Separation Time



Harsh Solvents

1  
Understanding customer needs

2  
Provide customer first order answer

7  
Installation and startup

3  
Feasibility testing

## HOW WE WORK WITH YOU FOR CUSTOM SOLUTIONS

6  
System build

5  
Develop system design and estimate

4  
Agree on important design parameters with customer

## BENEFITS OF CMS MEMBRANES

### SUPPORT FLOW CHEMISTRY

Continuously drying process solvents at any scale from mL/min to gal/min

### ENABLE NEW CHEMISTRY

Membrane systems deliver on-demand dry solvent that may not be available commercially in an anhydrous state.

Membranes can dry solvents to ppm water levels. Drier solvent improves yield and purity.

### SUPERIOR PERFORMANCE

CMS membranes require a small factory footprint and reduce process environmental footprint.

### SMALLER FOOTPRINT