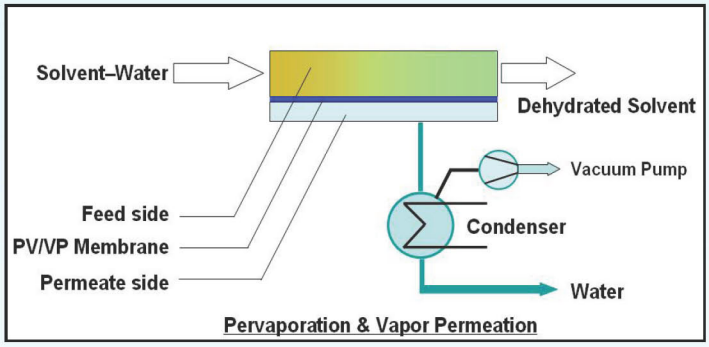
NaA Zeolite Pervaporation Membrane Process for Solvent Dehydration

Pervaporation & Vapor Permeation is an energy efficient combination of membrane permeation and evaporation. It's considered an attractive alternative to other separation methods like Extractive Distillation,Molecular Sieve for a variety of processes. Pervaporation is used for the dehydration of organic solvents and the removal of organics from aqueous streams.

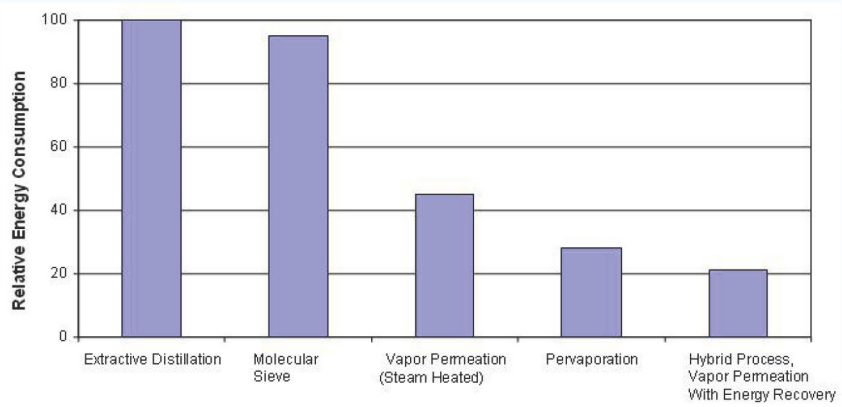


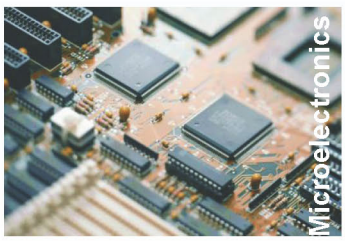
Pervaporation & Vapor Permeation

Pervaporation involves the separation of two or more components across a membrane by differing rates of diffusion through a thin layer and an evaporative phase change comparable to a simple flash step. A concentrate and vapor pressure gradient is used to allow one component to preferentially permeate across the membrane. A vacuum applied to the permeate side is coupled with the immediate condensation of the permeated vapors. Pervaporation is typically suited to separating a minor component of a liquid mixture, thus high selectivity through the membrane is essential. Pervaporation can used for breaking azeotropes, dehydration of solvents and other volatile organics, organic/organic separations such as ethanol or methanol removal, and wastewater purification.

Process Advantages

* Low energy consumption,low running cost
* No entrainer required, no contamination
* Less waste effluent
* Easy maintenance
* Functions independent of vapor/liquid equilibrium





PV/VP technology can be used for the following products

Methanol
Ethanol
Propanol & IPA
Butanol & IBA
Pentanol
Cyclohexanol
Benzyl alcohol
Benzene
Toluene
Phenol
Acetone
Butanone
Methyl isobutyl ketone (MIBK)
Triethylamine
Pyridine
Aniline
Chlorinated hydrocarbons
Dichloro methane
Perchloroethylene
Methyl tert-butyl ether (MTBE)
Ethyl tert-butyl ether (ETBE)
Di-isopropyl ether (DIPE)
Tetrahydro furan (THF)
Dioxane
Methyl acetate
Ethyl acetate
Butyl acetate
Acetic acid

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