

LIQUID SOLVENT DRYER

Mellcon Engineers are the manufacturers of complete range of Liquid Dryer, Designed for removal of dissolved water from a variety of liquids critical to Industry. These dryer are designed for a continuous duty like Twin tower liquid dryer system or single tower liquid dryer system for batch operation i.e. Desiccant systems for liquid dehydration have two basic cycles:-

Drying- The removal of dissolved water from liquids is accomplished by passage of the wet liquid through a freshly reactivated packed column of granular desiccant material. Continuous operation is accomplished by the use of dual adsorbers, with one tower on the process stream while the other is being reactivated.

Reactivation- Reactivation is accomplished in the following steps:

1. Drain the tower of liquid product.
2. Heat the desiccant to release water.
3. Remove released water from the tower.
4. Cool and refill.



Before reactivating a tower, the single volume of process liquid is emptied.

Low volatility liquids can be drained or pumped into a storage tank. many highly volatile liquids (e.g., propane) can be pumped or pressurized (by heating) back into the process line. Heating of the desiccant in the dryer is accomplished with internal heaters (electric or steam or thermic fluid) in conjunction with the use of a dry non-reactive purge gas (like Nitrogen) and in the Convection dryer by passing a hot gas stream through the bed. During reactivation the residual process liquid and adsorbed water are vaporized as reactivation temperatures are attained.

Mellcon liquid dryer are offered in two basic designs, internal heat reactivation (IHR type) and external heat reactivation (EHR or Convection type). Mellcon engineers evaluate each application to determine the best system.

Reactivation system alternatives include

I.Type of Reactivation System

- a) Open (once through)
- b) Closed (recirculated high or low pressure)
- c) Open Heating, Closed Cooling

II. Heat Source

- a) Electric or
- b) Steam
- c) Thermic fluid

Mellcon applies 15 years of experience in adsorption systems to the design of liquid dryers. Mellcon's engineers department is capable of designing liquid dryers for many diverse applications.

A partial list of typical liquids dried by Mellcon systems includes:

Aromatics- Benzene, Toluene, Xylene

Saturated Hydrocarbons- Propane, Butane, Pentane, Hexane

Unsaturated Hydrocarbons- Butadiene, Butene, Propylene-Propane Mixtures

Chlorinated Hydrocarbons- Methylene Chloride, Trichloroethylene, Trichloroethane Refrigerants and **Propellants-** Refrigerant 11, 12, 22, 113, 114, 134, 404, 407

Miscellaneous Liquids- Ethanol, Vinyl Chloride, Acetone, Tetrahydrofuran, Dimethylacetamide, Methyl-Ketone, Ethylene Dichloride, Normal Paraffins, Kerosene