

Ethanol drying



Siliporite® molecular sieves dry ethanol down to the ppm level for years whether for biofuels or for high purity applications, such as food, beverage or pharmaceuticals.

Ethanol drying for biofuels and food applications

Ethyl alcohol, produced either by fermentation or synthesis, needs to be dehydrated to very low water levels for some of its various end-uses. Applications for anhydrous ethanol include bio-fuels (direct blending and ETBE production), and industrial chemical, but also food and pharmaceutical ingredients.

Dehydration of ethanol in azeotropic conditions (93-96 % v/v) using the Pressure Swing Adsorption (PSA) process with molecular sieves columns offers significant economic and environmental advantages, compared to traditional ternary distillation processes, and is today the preferred technology.

Thanks to various process improvements developed by engineering and construction companies, the energy yield (related to vapour consumption) is improving steadily.

Since the late eighties, CECA has been able to offer a specific **Siliporite® 3A** type Molecular Sieve for this application.

Over the years, two different grades, **Siliporite® EPX 3B** and **Siliporite® EHP**, were developed, each one optimised for specific uses.

Both adsorbents share common characteristics:

- ▀ high mechanical strength and attrition resistance
- ▀ outstanding adsorption kinetics
- ▀ negligible ethanol co-adsorption
- ▀ minimized by-product formation