

Applications of Solid/Liquid/Gas Separations In Methanol Production Processes

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Abstracts

Methanol is a hydrocarbon, comprised of carbon, hydrogen and oxygen. Its primary uses are chemical production, fuel, biodiesel production, and water treatment. There are 18 methanol production plants in the US and over 90 plants worldwide with a capacity of 11 billion gallons. A typical methanol production process includes syngas production and methanol conversion two steps. Gas/liquid, gas/solid, solid/liquid, and liquid/liquid separations are installed throughout the process, and are critical in determining product yield and quality. In this paper, an overview of methanol production process, applications of solid/liquid/gas separations, and improvement of production efficiency by optimizing solid/liquid/gas operation will be presented. Case examples show with optimized filtration and separation system and process design, proper selection and combination of filtration and separation equipment, 99.9% separation efficiency improved from 8 micron to 1 micron with a lower pressure drop, higher stability, smaller footprint, and increase of product yield from 15-20%.

About Beijing Cleafr Filtration Technologies Company: Cleafr develops and manufactures high efficient filtration and separation products, and deliver the most efficient and economic filtration and separation solutions to customers through optimized system design, and the best selection and combination of elements or equipment. The company serves a broad industry area in China with a focus on oil and gas, petrochemical and chemical processing industries.