

Olefins-paraffins separation by Ole-SIV Process: advanced applications in butylenes production, propylene splitting and ethylene recovery

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Ole-SIV is a breakthrough adsorption process, which effectively separates olefins and paraffins with substantial economic benefits. Ole-SIV is being commercialized in butane-butylenes separation as an alternative to conventional distillation/extractive distillation processes. The proprietary Ole-SIV adsorbent traps C4 olefins while C4 paraffins pass through. The adsorbate is periodically desorbed to produce high purity butane and butylenes stream. The butylenes stream can be further treated, if desired, in small columns to produce butene-1 and 2. Ole-SIV can significantly reduce investment cost and energy consumption compared to conventional distillation processes. Ole-SIV is being applied to produce propylene and recover ethylene from FCC off-gas. Only adsorbing olefins from C3 mix, Ole-SIV can economically separate propylene. By trapping ethylene and propylene while passing light gases in the FCC Off-gas, Ole-SIV recovers 95% of the ethylene with use of propylene refrigeration system, which is far less energy intensive than ethylene refrigeration cycle.