



UOP Split Olefin Feed Technology (SOFT)

Refining

Increasing efficiency, maximizing product capacity

With increasing market demands for alkylate, refiners need to be able to maximize alkylate yield while maintaining valuable blending quality. But an increase in production often translates into unit upgrades and hefty capital costs.

UOP Split Olefin Feed Technology (SOFT) gives customers with gravity-type settlers, the ability to expand capacity and/or improve alkylate quality with minimal capital investment and generally no major equipment upgrades.

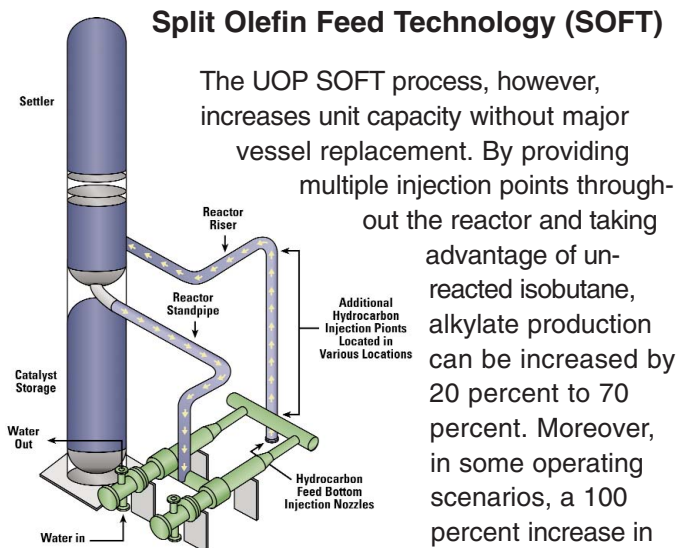
Originally developed by the Phillips Petroleum Company as a method to reduce utility usage and costs, SOFT was quickly recognized for its ability to increase octane barrels. SOFT optimizes the isobutane to olefin contact in the reactor, resulting in an increase in alkylate yield and a reduction in energy consumption on a per octane-barrel basis.

The technology is the lowest-cost expansion technology on the market today. In one customer cost study, the capital required to achieve the same capacity increase without SOFT was significant, requiring the replacement of major vessels. Using SOFT, however, the capital requirement was 94 percent less than the replacement option.

As of 2007, 33 refiners have successfully implemented SOFT technology into their existing ConocoPhillips-licensed alkylation units.

A closer look

A key operating parameter in any alkylation unit is the Isobutane to Olefin ratio (I/O). Higher I/O ratios increase alkylate yield and quality, while decreasing the formation of Acid Soluble Oils (ASO). In a typical expansion, an increase in olefins would characteristically reduce this ratio, unless isobutane circulation also was expanded. This type of expansion can be costly, since it can require replacement of major process vessels.



some unit modifications, can be accomplished by implementing SOFT.

The hard facts on SOFT

- Low capital investment
- A 20 percent to 70 percent increase in capacity, in most cases, with no major equipment upgrades
- Increase in octane barrels using existing equipment
- Maintain efficient mixing during step-change in feed rates
- Substantially increase production without increasing catalyst inventory
- Reduction in energy consumption on an octane-barrel basis
- Potential increase in alkylate octane levels
- Requires no additional unit plot space
- Used commercially since 1986

For more information

For more information, contact your local UOP representative or our Des Plaines sales office:

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