A Honeywell Company

Energy Efficient Plant Designs for Linear Alkylbenzene (LAB)

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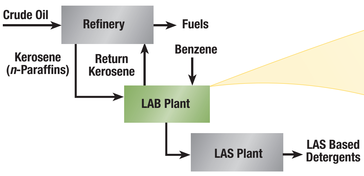
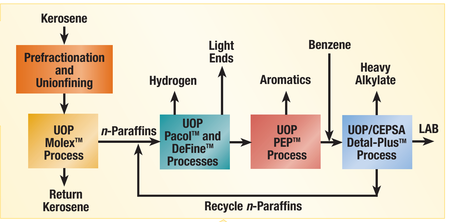
Cost reduction improvements are being implemented into the latest LAB plant designs for a significant reduction in energy and capital requirements.

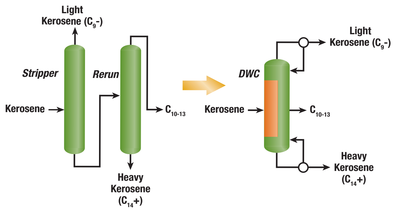
Linear Alkylbenzene Sulfonate (LAS) accounts for more than 40% of all surfactants used in household laundry detergents



Solid Bed Alkylation (Detal-Plus) is the alkylation technology of choice for new LAB plants

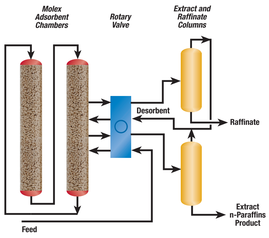


Prefractionation and Unionfining → Kerosene Pretreatment Improvements



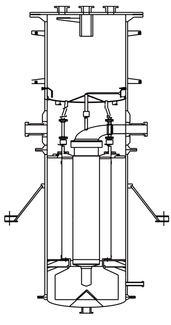
- Single Dividing Wall Column (DWC) replaces traditional 2-column unit for reduced capital and utility requirements
- Newly developed catalysts result in operation at lower separator pressures

UOP Molex Process → UOP Molex Process Improvements



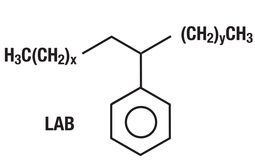
- Reduced Rotary Valve cycle times increase throughput
- The addition of a tertiary flush, and reduction in circulation and reflux rates reduce the size of the columns in the unit and the utilities requirements

UOP Pacol and DeFine Processes → UOP Pacol Process Improvements



- Increased catalyst space velocity reduces the catalyst requirement and the reactor size
- Latest DeH-15 catalyst exhibits improved selectivity, reducing the size of the reactor
- Optimized hydrogen-to-hydrocarbon ratio reduces utilities

UOP/CEPSA Detal-Plus Process → UOP Detal-Plus Process Improvements



- New ZDA-2 catalyst allows for significantly reduced benzene circulation rates, which results in reduced vessel sizes and utility requirements
- Improved reactor and fractionation column designs also result in reduced vessel sizes and utility requirements

25% reduction in energy costs and capital costs from latest LAB plant technologies!

* 100 KMTA LAB Plant

25% reduction in energy cost + **25%** reduction in capital cost = **50%** improvement in the IRR