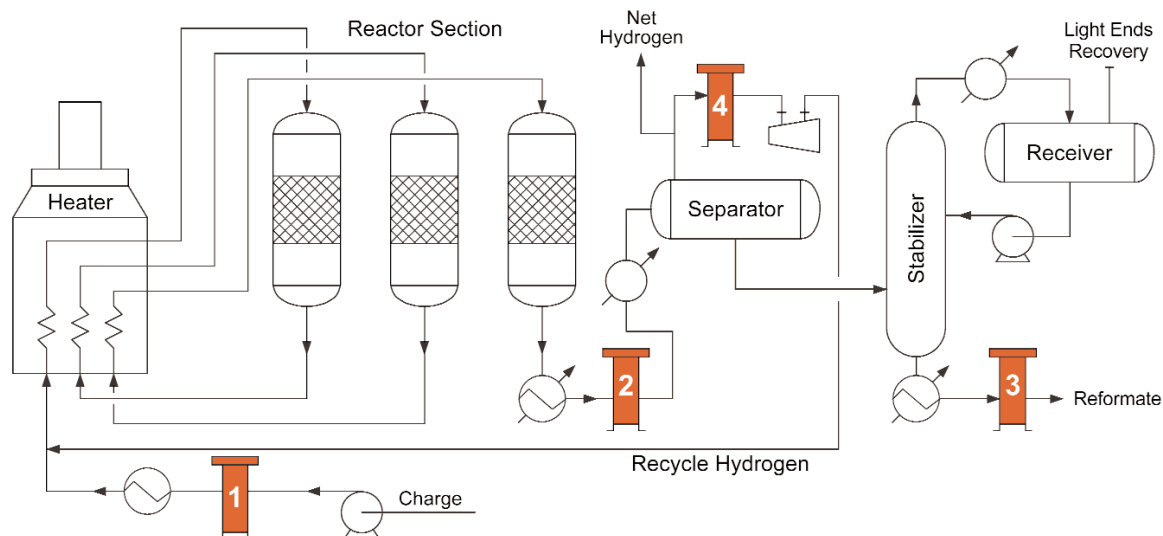




Catalytic Reforming



The Catalytic Reforming process is used to upgrade low octane feedstocks into high-octane fuels with high yields of aromatic hydrocarbons. The feedstocks for catalytic reforming are hydroprocessed low octane naphthas. In this process the naphtha feedstock is combined with recycle hydrogen gas, heated to reaction temperature and fed into a series of reactors. After the catalytic reaction the reformate is cooled and separated to recover the hydrogen gas for re-use in the process. The liquid product is then sent to a stabilizer to remove light ends and fuel gas from the C6 aromatics product.

Operational Problems

1. Catalyst fouling
2. Compressor fouling
3. Final product quality
4. Process liquid carryover

Solutions

1. A 5 - 10 micron Nowata Filtration pleated or depth type cartridge filter on the naphtha feed before the reactor feed heat exchanger should be installed to prevent catalyst fouling.
2. A Nowata Filtration depth type high-temperature cartridge filter is installed on the reactor feed outlet to prevent catalyst fines from fouling the hydrogen separators.
3. A 5 - 10 micron Nowata Filtration cartridge or bag filter is installed on the reformate product line to remove any solids contaminant that could be carried to product storage or downstream processes.
4. A Nowata Filtration Coalescer using 0.3 micron NFF coalescing filter elements is used to remove hydrocarbon liquids and catalyst fines from the process gas separator prior to the recycle compressor, amine sweetening or other downstream processes. The separators handle hydrogen recovery, fuel gas and light ends.



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