

CATALYTIC VISBREAKING

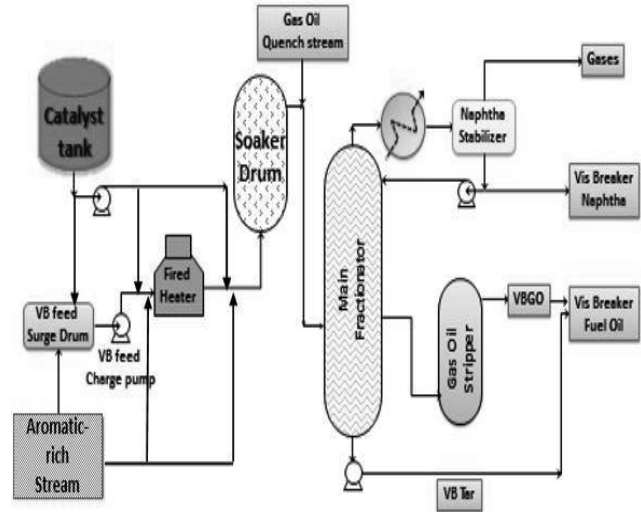
A Low Cost Residue Upgrading Technology

Visbreaking is a low cost, mild thermal cracking process which converts low value vacuum residue to high value light and middle distillates. In the process, the viscosity of the remaining residue is greatly reduced which results in the saving of valuable cutter-stock required to produce fuel oil.

The conversion in visbreaking process is limited by the stability of the fuel oil. As the demand for fuel oil goes down and that of middle distillates goes up, it is beneficial to maximize conversion in the visbreaking process without compromising with the stability of the fuel oil.

HPCL R&D has developed a novel catalytic approach to increasing the conversion in Visbreaker unit while meeting the stability of the fuel oil. The in-house developed water soluble catalyst VisCat-07 can be easily added to the Visbreaker feed in the form of aqueous solution.

Extensive experimentation was done at lab scale to study the role of catalyst under different operating conditions.



Based on the results, a trial run was successfully demonstrated at Visakh refinery. Necessary hardware modification to the existing unit was made at a marginal cost. The use of catalyst resulted in an increase in the distillate conversion by 3.26 wt% with selective increase in gas oil yield.

HPGRDC offers the catalytic visbreaking technology to interested refineries which can help in increasing their distillate yield from VBU by up to 3-5 wt% depending upon the feed properties and operating conditions.