

Visbreaking in petroleum refineries: the key for a valuable product

In Refineries and Petrochemical processes, on-site control is of primary importance with regards to product quality. The use of reliable viscosity measurement is critical to refineries for safe characterization and handling the products. It became essential for better process control while increasing output capacity to meet ever growing demands. Visbreaking is one of several cracking methods used in the petroleum industry to process crude oil and petroleum products for commercial use. Developed in the late 1930s, it is used to produce more valuable products while maximizing end-product profitability.

How to define visbreaking process?

Visbreaking is a mild form of thermal cracking, with primarily aim to lower the viscosity of vacuum residues.

Two visbreaking processes are available: the coil or furnace type and the soaker type. In each process, viscosity control is necessary to adjust heating parameters and optimize distillation.

It is a liquid-phase thermal cracking process used to convert heavy or high viscosity petroleum stocks to lower viscosity fractions suitable for use in HFO. Visbreakers are now designed to maximize yield of valuable gas oil and other lighter ends used in fuel blending.

In [our application datasheet](#), we explain in detail the 3 main objectives of visbreaking:

- Reduce the viscosity of the feed stream as much as possible without significantly affecting fuel stability
- Reduce the amount of residual fuel oil produced by refineries
- Increase the proportion of middle distillates in the refinery output

Viscosity measurement in visbreaking process

Inline viscosity measurement may be used in several steps during the visbreaking process to help preventing fouling and increase yield. Viscometers may help characterize the incoming feedstock for adjustment of heating parameters. Viscometers may also monitor the visbreaker outputs to ensure that sufficient fuel oil and light ends have been removed from the bottom residues.

Sofraser process viscometers and viscosity analyzers are suitable for petroleum industries and visbreaking process. Sofraser Thermoset viscosity at reference analyzer is maintenance-free, reliable precise and no additional installation is requested. Discover our product range and find the best match for your process.

