Overview Summary
While Hydrocracking is one of the most flexible processes in refining, it is also one of the most complex in terms of possible operating strategies. There are a multitude of questions about feeds, conversion (total and per pass), catalyst life and hydrogen requirements which affect the profitability and safety of these process units. HCR-SIM is an excellent tool for enabling refining staff to fine tune this critical operating unit. Unit objectives may be maximum naphtha, kerosene, diesel, or lubes production.

The HCR-SIM combines a detailed, rigorous kinetic simulation of the reactor and accurate product separation to produce the industry’s most trusted analytical tool for hydrocracking. HCR-SIM can be used to model all hydrocracking flow configurations, including units with one or two stages of cracking, once-through, partial, or recycle to extinction, and either one or two high pressure gas separators.

HCR-SIM is a valuable tool to determine the most profitable feeds and time to shutdown, to establish the best operating strategy, to monitor catalyst deactivation, and to develop a consistent set of yields vectors.
Interface Options
HCR-SIM is available through a graphical user interface with the same user-friendly look and feel as other unit operations within the Petro-SIM family of process simulators. Make configuration changes through simple drag and drop techniques on a process flowsheet diagram, compare plant data results in a meter view, and perform case studies and optimisations all within a single environment.

HCR-SIM supports a real integration with Microsoft Excel® allowing you to readily create a customisable Excel application workbook for driving calibration, prediction, and even optimisation case runs. Analyse the results of several cases directly from within this Excel environment. Multiple charting options allow easy analysis of data and model predictions. Excel interfaces are automatically generated and can be customised to your specific needs.

HCR-SIM™ and Petro-SIM™
Because HCR-SIM is available within the Petro-SIM environment, users with a Petro-SIM license can build very detailed process unit models that take advantage of Petro-SIM’s sophisticated analysis tools, such as the popular LP Utility for easy generation and maintenance of LP submodels. Generate detailed models using downstream separation and auxiliary unit operations, link with assay and feed libraries and crude units to investigate feedstock effects, or use HCR-SIM as part of a complete refinery wide model, at a level of detail unsurpassed by any other process simulation package.