



Will Your Regenerated Catalyst be a **Thoroughbred** Again?

The EURECAT R&D Group has a vast amount of experience with activity testing on hydrotreating catalysts. Our first pilot plant MDSU was installed in 1996 and was used extensively to determine the HDS activity of regenerated catalysts as part of our pool management services.

The introduction of low and ultra-low sulfur specifications for diesel required testing with increasingly deep HDS regimes. Two new MIF units were purchased in 2003 to carry out testing at these new conditions. The MIF's are still used today, one for HDN activity testing and the other for additional R&D testing.

As HDS activity testing became more and more important to EURECAT's customers, our testing capacity had to again be expanded to cope with the demand. Our response was the installation of a Multi-Tube test Unit (MTU) which allows testing of 10 samples in 10 parallel reactors of 10 ml each. The MTU runs a three condition protocol and has proven to be extremely reliable. Based on this success, a second MTU was installed in 2010, increasing EURECAT's total number of test reactors to 22.

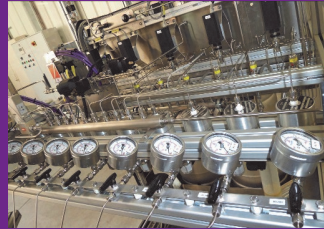
YOU CAN'T JUDGE A HORSE BY ITS COLOR ANYMORE

Introduction of the latest generation Type II and balanced Type I/Type II catalysts has shaken up the catalyst regeneration universe. Many of these catalysts require post-treatment after regeneration, and unfortunately the post-regen activity is much less predictable using only the data traditionally gathered in a regeneration study such as surface area and contaminant levels.

With today's advanced rejuvenation techniques, a critical determining factor for catalytic activity is re-dispersion of the active metals. True catalyst performance is best measured with pilot plant activity testing.

DON'T JUST ESTIMATE THE ACTIVITY... MEASURE THE ACTIVITY

EURECAT can measure both the Hydrodesulfurization (HDS) and Hydrodenitrification (HDN) activity of your regenerated CoMo or NiMo catalyst in our state of the art pilot plants. Expressed as RVA or RWA versus the fresh reference catalyst, the activity value provides you with a sound decision basis.



ACTIVITY TESTING APPLICATIONS

ULTRA LOW SULFUR DIESEL HYDROTREATING (HDS)



The majority of the catalysts we test belong to the ULSD category, where the investment and operational risks associated with regeneration and rejuvenation of the catalyst justify an HDS activity test before the catalyst is reused. Activity testing is an essential and dependable quality control tool, allowing the transfer and reuse of your catalyst batch within the corporate catalyst pool. EURECAT tracks the activity values for various lots in catalyst pools we manage for several refining majors, allowing the customer to carefully manage when and where each lot is applied with minimum risk exposure.

Our standard MTU test protocol measures catalyst performance at 3 different levels of severity utilizing straight-run gasoil (1.2 wt% S) at the following conditions:

WABT:	640 / 650 / 660 °F	LHSV:	2 h ⁻¹
pressure:	580 psi	H ₂ /oil:	300

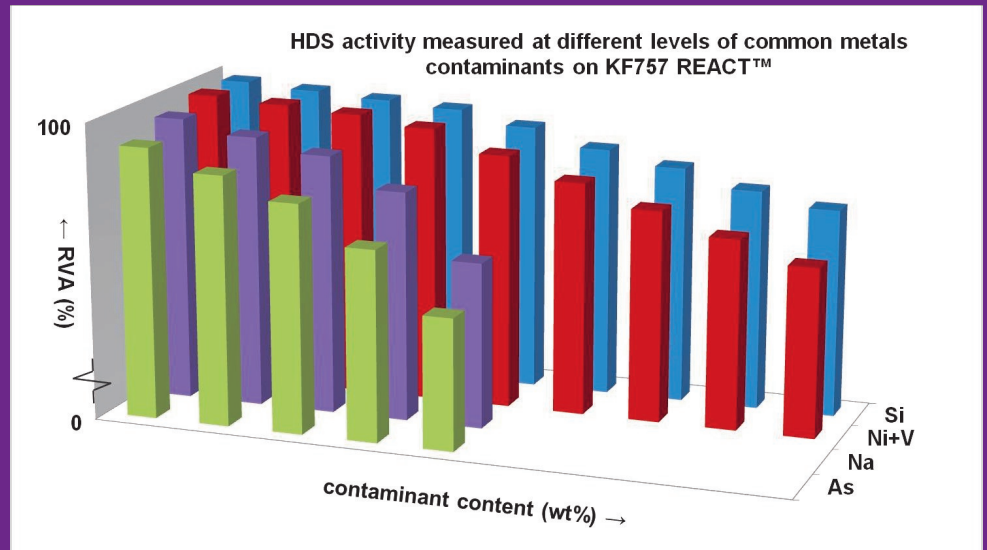
EURECAT's extensive database on activity testing contains a wealth of process and catalyst knowledge. Shown below is an example of a study carried out by EURECAT to assess the effects of different contaminants on the activity of REACT™ treated KF-757.

HORSE TRADING

If you don't have a requirement to reuse your catalyst within your own refinery, having it activity tested by EURECAT will open the door to selling it to an affiliated refinery or to a third party.

EURECAT's catalyst purchase and resale network is shared between our affiliates in the USA, France, Italy, Saudi-Arabia and India. Our worldwide sourcing efforts assure a steady supply and demand for regenerated catalysts. In addition, the catalyst pools we manage for several customers are often in undersupply or oversupply of exactly the catalyst that you may wish to sell or purchase.

Contact EURECAT today for a qualified regenerated catalyst and buy a race-horse for a workhorse price.



HYDROCRACKER / FCC PRETREATMENT (HDN)

HDN performance of NiMo catalyst in HC-PT or FCC-PT conditions is tested in a dedicated format on LCO feed at an operating pressure of 1450 psi (100 bar).

NON-STANDARD HYDROTREATING TEST FORMATS

EURECAT will gladly develop a customized testing protocol for your specific process or R&D application. Our MIF testing unit is extremely flexible in terms of operating temperature, pressure, LHSV, and H₂/oil ratio. Various feed types can also be utilized.

HYDROGENATION ACTIVITY / SELECTIVITY TEST

In addition to CoMo and NiMo catalysts, EURECAT can also test your Palladium selective hydrogenation catalysts for activity and selectivity, comparing it to the performance of fresh catalyst. Pilot testing confirms the effectiveness of our exclusive REACTIVATION treatment.



Leading the Race