

We Sell **Boring** Startups



CATALYST SERVICES

- **TOTSUCAT PREAMTIVATION**

Allows the fastest and safest startup possible.

- **SPECIALTY REGENERATION AND REJUVENATION**

Get >95% activity from Special Regeneration and/or Rejuvenation. Our techniques are much different than a simple carbon burn.

- **SAS SERVICE**

Only get the "good stuff" back with our Sample, Analyze, and Segregate Service.

- **CATALYST RESALE**

Why buy fresh catalysts when regenerated catalysts with "like-fresh" activity are available?

- **ACTIVITY TESTING**

Don't just rely on surface area and poison levels. With two multi-tube test units, Eurecat now runs 82 activity tests per month to measure the true catalyst activity at ULSD conditions.

- **PRESSURE DROP TESTING**

Eurecat offers Pressure Drop Testing at our laboratories in the US and Europe. This provides you with real-world ΔP predictions.

START UP HYDROTREATING UNITS WITHOUT THE "EXCITEMENT" OF SULFIDING

Temperature excursions, DMDS odors, H_2S exposure and emissions, sour water formation, loss of production, off-spec product, delays in processing cracked feeds . . . These issues make catalyst sulfiding a hazardous, unpredictable, and expensive procedure.

Fortunately, the start up of a Hydrotreating Unit does not have to be so "exciting". Eurecat offers a "boring" alternative to in-situ catalyst sulfiding with our patented Totsucat[®] Preamtivation and Sulfiding service.

By treating your catalysts with Totsucat prior to loading, complicated and time consuming sulfiding steps are no longer required. Instead, the catalyst is delivered to your site totally activated and ready to work as soon the unit reaches the SOR temperature.

There are no temperature holds during heat up, no requirement for DMDS injection, and no need to measure H_2S levels. Totsucat allows you to get online fast without risking poor catalyst performance resulting from incomplete activation.

Eurecat Sulfiding Technologies

BORING IS GOOD

TOTSUCAT APPLICATIONS

Pre-Activating hydrotreating catalysts with Totsucat offers **many benefits** to the refiner including:

- **Load-and-Go reactor startups.** The active metal sulfides are totally formed during the Totsucat treatment. No additional sulfiding agents or complex activation procedures are required after loading.
- **No temperature excursions.**
- **No need for additional hydrogen** at startup.
- **Minimal sour water formation** during startup.
- **No odors or HSE issues** related to the handling of sulfiding chemicals and H₂S.
- **Negligible amounts of H₂S** are released during reactor heat up, protecting sulfur sensitive units downstream and preventing a sulfur overload of your SRU.

Starting up with Totsucat-treated catalysts is similar to a restart after an emergency shut down. **Startup time is reduced to a few hours** while the risk of damaging the catalyst prior to activation is eliminated. The catalyst load will achieve peak performance since sulfiding and activation is controlled at very precise conditions by the patented Totsucat process.

NAPHTHA HYDROTREATERS - Totsucat G has become the sulfiding process of choice for naphtha hydrotreaters as well as other light end applications

including:

Tail Gas Units	Lube Units
Gasoline Post Treat	Pygas Hydrotreaters
Hydrogen Plants	Petrochemical Units

ULSD - The latest generation of high activity catalysts are typically used to meet the rigorous demands of ULSD units. Our R&D efforts have uncovered advanced techniques, such as Totsucat D, that achieve the extremely high activity levels available from these state-of-the-art ULSD catalyst offerings. With Totsucat D, startup times are minimized and catalytic activity is maximized.

HYDROCRACKERS - The performance of hydrocracking catalysts is critical to the operation of the unit, making it crucial that these specialized catalysts are treated with the greatest of care. Processing with Totsucat HC ensures that hydrocracking catalysts function as designed without the need to spend valuable production time on in-situ sulfiding. And Totsucat N is designed to maximize the HDN activity of the newest NiMo catalysts that are typically used in the pretreat section of the hydrocracker.

CAT FEED / GASOIL HYDROTREATERS - Totsucat E is specially designed for large units with high sulfur feeds ($S > 0.5$ wt%). Totsucat E works especially well in heavy distillate hydrotreaters and gasoil hydrotreaters (GOHT) where long startup times and the threat of sulfiding exotherms are problematic. With Totsucat E, the catalyst will reach full activity within hours of startup instead of days. Totsucat E pre-activated catalysts can also be delivered in a passivated form that makes it possible to load the reactor under air.

START UP WITH CRACKED FEEDS - Eurecat has also developed an exclusive procedure to gently moderate the initial catalyst hyper-activity of freshly sulfided catalyst. This unique process, called Totsucat CFP (Cracked Feed Protection), allows the direct introduction of cracked or heavy feeds without the 3-4 day delay typically recommended by catalyst manufacturers. Catalysts treated with Totsucat CFP are no longer ultra active after sulfiding, allowing the refiner to gradually introduce cracked and heavy feedstocks during the first hours of a startup without causing permanent damage to the catalyst. Excess coke and gum formation will be prevented since the initial catalyst activity has been carefully modified following activation. Most CFP users have also experienced lower deactivation rates by treating their catalyst with Cracked Feed Protection.

