FCC Catalyst & Additives

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Quality. Performance. Value.

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Who Are We

Haven't heard about us? No problem. We're here to answer your questions and possibly create value for you in the future.

As a starter, HCpect is a dedicated FCC catalyst and additive producer. With a humble beginning in 2006, the company has evolved into a full FCC catalyst and additives solution provider with its R&D center and ISO 9001:2008 and ISO 14001 certified manufacturing facility in Qingdao, China. Innovation, quality control, and cost optimization have been the backbones of our endeavors. In 2018, HCpect is on schedule to produce and sell approximately 20,000 tons of catalyst and additives, among which in excess of 3,000 tons of them will be delivered to Houston, Texas.

We will be gradually and surely expanding our international footprint. With that in sight we already laid out a concrete plan to double our production capacity to 40,000 tons per annum by end of 2019. For our North American clients, we've partnered with a reliable logistics provider, a trustworthy name in the FCC community in North America based in Houston. A highly reputable lab in Savannah, Georgia will be analyzing your beloved equilibrium catalyst and other samples. Yes, we know technical service is integral to our catalyst product. And we can't wait to offer you our other value-added services.

Our team at HCpect appreciate the opportunity to talk to you about your needs and concerns. We are ready to start our first conversation, and we are committed to earn your trust and business.

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Our FCC Catalyst Technology Platform

Owing a great debt of gratitude to more than a half century's continuous innovations in FCC catalyst technology, HCpect didn't have to reinvent all the wheels as a new kid in town. The grand milestones such as Y zeolite, ZSM-5 zeolite, matrix, and metal trapping technologies were famously recorded in the textbooks. The extremely harsh environment for the catalyst to survive and function can partly explain the fact that it's ever more difficult to discover a brand-new material for this particular application. HCpect's approach has been identifying and focusing on key areas in the arena for stepwise improvement to match the catalyst performance of the industrial benchmarks, and possibly further differentiate from the peers.

Our FCC catalyst technology platform can be summarized in the illustration. The activity center being the zeolite has been continuously improved on its activity and selectivity. The synthesis and ion exchange process of the Y zeolite certainly impact the performance of the catalyst. HCpect exploited this difference and was able to use targeted variants of the Y zeolite for gas oil cracking and resid cracking, respectively.

The matrix technology is also essential to improve the bottom line of unit profitability. We used two approaches to improve pore size distribution for bottoms cracking. Natural minerals, if optimized, would offer improved pore size distribution. Specialty alumina is also well known for improved bottoms upgrading. The combinatorial optimization of both weapons gives our catalyst a special edge in bottoms conversion.

In the background, our dual binder system allows us to flexibly control the attrition resistance property of the catalyst without jeopardizing pore diffusion.

Metal trapping technology is essential in handling resid feed with high metal content. Our metal trap combines an active vanadium trapping component, a specialty alumina, and rare earth to neutralize the detrimental effects of the metals in the feed.

These technology and know-how allow HCpect to tailor catalyst formulation for each individual FCC unit, be it a hydrotreated gas oil or a resid unit or a deep cracking unit, to maximize profitability within the boundaries of unit operating parameters and constraints.

ZEOLITE

Application-specific type of Y zeolite;
Activity & selectivity improvement by removal of non-framework alumina

MATRIX

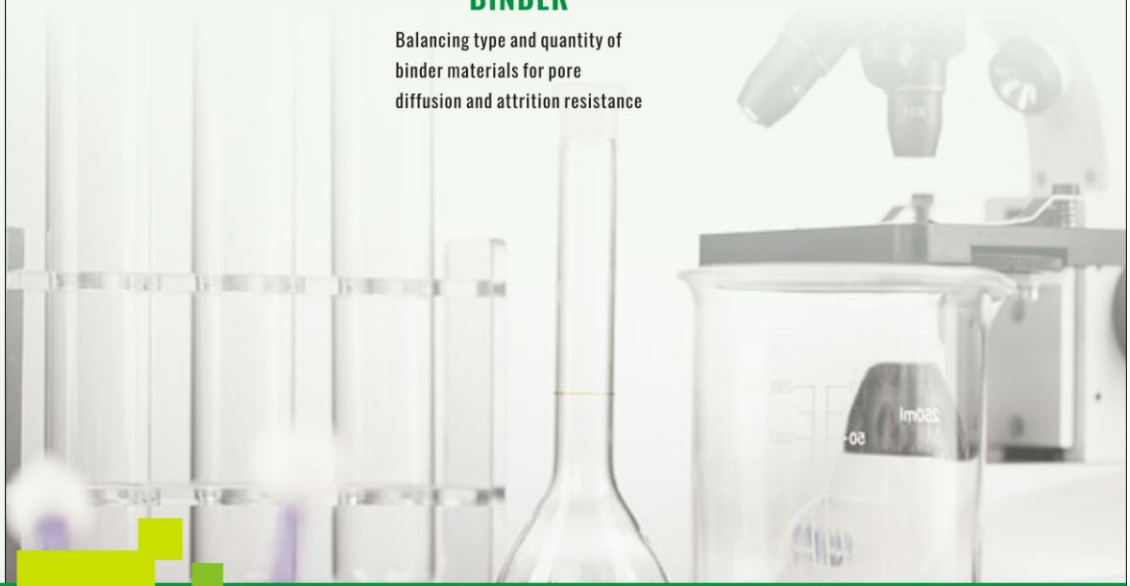
Matching of minerals to create desired pore size distribution
Optimized use of specialty alumina

METAL TRAP

Efficient vanadium trapping;
Specialty alumina for nickel trapping;
Available as separate additive

BINDER

Balancing type and quantity of binder materials for pore diffusion and attrition resistance



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HCpect FCC Catalyst Lineup

Essense™
Balanced formulation with high activity REUSY zeolites, coke selective, and handles moderate level of metals in the feed
Enhance™
Resid cracking with superior bottoms upgrading and metal tolerance
Evoke™
Maximizing gasoline yield while handling resid feed
Excel™
Low rare earth formulation with good coke selectivity for clean VGO feed
Agile™
Dual zeolite formulation for optimized gasoline and LPG yield
Attain™
Maximized gasoline yield and octane value, low to moderate LPG boost
Endure™
Low Z/M catalyst to maximize LCO yield
Extend™
Performs as a fresh catalyst if not better, when TSS fines are treated and reused in matrix
Erudite™
Deep cracking catalyst for maximized propylene yield

Hcpect FCC Additives Lineup

HCSP™	Our competitive ZSM-5 additive
HCSO™	ZSM-5 additive focused on gasoline octane improvement
VTRAC™	Metal and vanadium trap
STRAC™	SOx additive
BUA™	Bottoms upgrading additive

HCpect's FCC Related Products

Zeolite: NaX, NaY, REUSY, REY zeolites with varied surface area and rare earth content

Specialty alumina: high surface area alumina (≥ 300 m^2/g) with tunable attrition resistance property

Aluminosilicates: high surface area (≥350 m^2/g) material for your special purpose

HCpect's Logistics Solution for North America

With a spur track on site, our logistics partner in Houston can readily ship catalyst by rail, or by trucking to North American refineries. The facility has sufficient and versatile warehousing for us to set up a two months' supply of "safety stock". Hence your FCC unit can be quickly restocked in merely a few days upon an emergency phone call.

Technical Services

You don't have to lower your expectations on technical services from HCpect. We will match or exceed the technical service you're currently receiving. For North America refineries, equilibrium catalyst will be sampled regularly as before and analyzed by a highly reputable lab in Savannah, Georgia. This lab routinely analyzes catalyst samples from multiple refinery units and is well recognized in the FCC community.

To directly support unit operation, periodical unit review, process simulation/modeling, troubleshooting, annual unit review, or professional training, we can have someone in the FCC talent pool in US that you already feel comfortable with to work with you on those issues.

Our well-equipped lab in Qingdao will also assist or collaborate in longer term project that you may be interested in. Our 2kg/h feed rate, and 10 kg catalyst inventory circulating pilot riser plant is ready to run scenarios for our clients.

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