UNITY HYDROPROCESSING COMPLETE CATALYST SOLUTIONS

Maximize yields of high-quality products with our comprehensive suite of hydrotreating and hydrocracking solutions, including catalysts, equipment, licensing and technical support.

Honeywell
UOP

MEET ALL OF YOUR HYDROPROCESSING NEEDS

Our technical experts work together with you to access the right catalysts to optimize unit efficiency and improve economic performance for the entire refinery. Unity™ Hydroprocessing Catalysts are universally compatible with whatever system and equipment limitations you may have. You can benefit from using Unity™ catalysts with or without Honeywell UOP equipment—even with a flow scheme from other licensors.

A UNIFIED APPROACH

Unity™ Hydroprocessing Catalyst solutions combine an extensive portfolio of performance catalysts with UOP global expertiseand support for operation, equipment, licensing and technical solutions in hydrotreating, pretreating and hydrocracking.

We look beyond simple reload requirements of a specific unit and instead we actively identify opportunities for you to get more value from your assets and benefit the entire refinery.

We provide holistic solutions to put the right feed into the appropriate asset under optimal operating conditions with the best catalyst system. Using this approach, we can not only help improve economic efficiency across the hydroprocessing units but also improve the overall economic productivity of other assets connected to the hydroprocessing units.

TAILORED PERFORMANCE

Unity™ Hydroprocessing Catalysts are continuously upgraded to get the best performance and value for your system. Our industry experts tailor a catalyst solution to help you achieve your desired performance results along with other options to help you improve your refinery profitability considering the unique challenges that you face.

Our global manufacturing capabilities mean shorter response times to supply the catalysts you need, as well as a wide range of loading options to boost performance.

- Extensive portfolio
- Universally compatible
- Regularly updated based on future needs
- Developed and manufactured globally
- Wide range of loading options
- Pilot plant tested

GLOBAL EXPERTS AND PROVEN SOLUTIONS

Honeywell UOP inaugurated the use of catalysts for the refining industry in 1931 and today is recognized as the leading developer of advanced catalysts for the refining industry.

Honeywell UOP leverages its long history of leadership in catalyst research and development and process technology to continually innovate new hydroprocessing catalyst solutions.

UNITY HYDROPROCESSING CATALYSTS

Whether you are looking to increase your capacity, meet tighter product specifications or need more flexibility in your operation, Honeywell UOP can help you meet your performance goals through our advanced refining catalysts.

UNITY HYDROPROCESSING PORTFOLIO

Take advantage of a complete portfolio of highly selective, high-activity catalysts, along with equipment, licensing and technical support that can be tailored to the needs of your operation. We can serve as your one-stop shop with comprehensive end-to-end solutions, or simply provide you with our top-quality catalysts. Either way, you'll gain the value of a consistent supply of high-performing catalysts from a world-leading supplier.

- Optimize unit performance
- Tailored to your operations
- Cost-effective

Hydrocracker Pretreat Catalysts

We offer a comprehensive solution for hydrocrackers across various operating pressures and a variety of feeds for different performance objectives. Pretreat catalysts ensure that the hydrocracker remains stable for a reliable cycle across these various conditions. Partnering with Crystaphase, we offer a complete solution to protect against unforeseen pressure drop increase, along with options to improve vapor liquid distribution and catalyst utilization. With our extensive alumina expertise, we offer a wide range of demetallization catalyst systems to protect against contaminants such as Ni, V, As, and non-metal contaminants such as silicon and phosphorous. In addition, we utilize our experience in renewable feed processing to protect against Na, Ca and Mg. Along with demetallization systems, we offer a range of competitive hydrotreating catalysts to achieve good distillate-selective conversion and low nitrogen levels for the hydrocracking catalyst to be efficient.

HYT-6419	The latest generation high activity hydrotreating catalyst is our recommended pretreat catalyst to maximize distillate production, as it enables the use of the appropriate hydrocracking catalyst system to achieve the highest volumetric yield of desired product mix, even from opportunistic feeds.
HYT-6319	A high-performance hydrotreating catalyst with high-denitrogenation activity to enable the appropriate hydrocracking catalyst system to convert feed into a high yield of aromatics—rich naphtha.
HYT-6219	A price-efficient hydrotreating catalyst for activity transition and post treat to meet consistently low sulfur levels in naphtha and kerosene.
HYT-9229	A high-performance demetallization catalyst to enable processing a maximum proportion of coker gas oil stocks and acidic crude derived hydrocarbon streams passivated with phosphorous-based additives.
HYT-8229	A high-capacity demetallization catalyst to enable processing a variety of opportunistic feeds without much compromise on life by trapping Ni and V.
HYT-8239	A high-performance demetallization catalyst to enable processing a variety of hydrocarbon feeds with stable activity while trapping Ni and V.
UF-75	A high-performance demetallization catalyst to enable the processing arsenic-rich opportunistic feeds with stable performance, even while operating at high LHSVs.

Distillate and Flexible Hydrocracking Catalysts

UOP provides a comprehensive portfolio of highly selective, high-activity Unity™ Hydrocracking Catalysts designed to meet performance needs for producing diesel, middle distillate or naphtha. Honeywell UOP ensures optimal performance through these innovative hydrocracking catalysts.

HC-800 Series	The latest generation of the flex-to-distillate hydrocracking catalyst platform offers the highest activity and saturation compared to the previous two generations. It is engineered to deliver breakthrough performance, providing exceptional distillate yield and unmatched feedstock flexibility.
HC-700 Series	The second generation of the flex-to-distillate hydrocracking catalyst platform offers higher activity and saturation compared to the first generation. It is designed to deliver high-distillate yield and feedstock flexibility, with proven robust stability.
HC-100 Series	The first generation of the flex-to-distillate hydrocracking catalyst platform features improved cold-flow properties and enhanced distillate selectivity compared to legacy catalyst platforms.
HC-425	A distillate-selective hydrogenation catalyst designed for targeted hydrogenation and improvement of cold flow properties.
HC-470	A super-saturation flexible hydrocracking catalyst designed to be used in a variety of flow schemes to produce maximum yields of middle distillate or naphtha products.

Naphtha Hydrocracking Catalysts

These catalysts are designed to maximize naphtha yields while minimizing LPG and light naphtha generation.

HC-185	A high-activity hydrocracking catalyst designed to maximize naphtha yields with reduced LPG and light naphtha generation.
HC-680	A high-activity, heavy-naphtha-selective hydrocracking catalyst with enhanced hydrogenation functionality.
HC-685	A naphtha-selective high-activity hydrocracking catalyst where maximum heavy naphtha is required.

Lubes Hydrocracking Catalysts

These catalysts are specifically designed for producing high-quality lube-base oils with enhanced activity and saturation.

HC-412	The latest generation of distillate-selective hydrocracking catalyst, designed for enhanced activity and high-quality lube-base oils.
HC-410	A distillate-selective hydrocracking catalyst targeted to increase saturation for high-quality lube-base oils.

Co-Processing Catalysts

Built upon UOP's vast experience with renewable feed processing, we have developed a range of hydroprocessing catalysts to co-process multiple types of renewable feeds in existing hydroprocessing assets to produce high yields of biogenic material over a long cycle. We have co-processing solutions to cover multiple assets, including the kerosene hydrotreater for SAF production, the diesel hydrotreater for renewable fuel production and the FCC pretreater or hydrocracker for flexible renewable hydrocarbon production. With our customized solutions, you can get the right fit for your refinery configuration to maximize the right type of renewable fuel production with the least amount of renewable feed.

HI-3151	A high-selective sour dewaxing catalyst to meet ATF specifications while co- processing up to 5% renewable feed in a kerosene hydrotreater.
HYT-6419	The latest generation hydrotreating catalyst to accommodate a larger volume of demetallization and dewaxing catalyst when needed, to enable the co-processing of the maximum possible renewable feeds for a planned cycle.
HYT-8229	A high-capacity demetallization catalyst to enable processing a variety of opportunistic feeds without much compromise on life, by trapping a variety of contaminants.
HYT-8249	An HDO-selective demetallization catalyst to selectively deoxygenate renewable feed while trapping maximum phosphorous and a variety of contaminants.
HYT-9229	A high-capacity demetallization catalyst to enable processing the maximum proportion of coker and cracked stocks, along with renewable feed by trapping silicon.

FCC Pretreat Catalysts

With over seven decades of expertise in alumina catalyst technologies, we have developed a variety of catalysts that offer stable performance, tolerating high-metal contaminants to improve economic performance of the FCC complex. As a major licensor of multiple FCCs across the world, we understand the synergy between FCC pretreat and FCC for optimum economics to maximize yield of desired product. Leveraging our alumina technology, we ensure a reliable performance handling some of the heavy and opportunistic refinery feedstocks with a performance-efficient demetallization system.

HYT-6219	A hydrotreating catalyst with good hydrogenation activity and stability to desulphurize / denitrogenate heavy feeds to moderate levels at high pressure.
HYT-4118	A hydrotreating catalyst with good hydrodesulphurization activity for stable performance at low-to-medium pressure.
HYT-8229	A high-capacity demetallization catalyst to upgrade a variety of distressed feeds by trapping a high proportion of nickel, vanadium, sodium, calcium and phosphorous.
HYT-9219	A standard-performance demetallization catalyst to enable upgrading a high proportion of heavy coker gas oil by trapping silicon and ensure stability of the cycle.
HYT-9229	A high performance demetallization catalyst to enable upgrading maximum proportion of heavy coker gas oil by trapping silicon and ensure stability of the cycle.

Naphtha Hydrotreating Catalysts

As a one-stop solution, this select range of catalysts offers reliable feed purification for dependable gasoline production. Leveraging our extensive naphtha technology experience, we enable our customers to handle a variety of naphtha feedstocks for reliable gasoline production over long uninterrupted cycles.

HYT-1119	A high-activity hydrotreating catalyst with stable desulphurization and denitrogenation activity across a variety of naphtha feeds.
HYT-9219	A standard-performance demetallization catalyst to enable processing a high proportion of coker naphtha for a long cycle by trapping silicon with good desulphurization activity.
HYT-9229	A high-performance demetallization catalyst to enable processing a maximum proportion of coker naphtha for a long cycle by trapping silicon with good hydrogenation activity.

Diesel Hydrotreating Catalysts

Utilizing over 70 years of alumina research and a variety of catalyst manufacturing technologies, we have developed some of the most active and price-efficient hydrotreating catalysts across multiple operating conditions and performance objectives. We have one of the highest hydrogenation-active NiMo catalyst systems to maximize the yield of liquid product, when pumping more hydrogen into it, to improve economic performance. Where the compressor is limited or make-up hydrogen is expensive, we have one of the most stable CoMo-based HYT-4118 catalyst systems. Along with our H_2 management solution and our refinery wide technology offering, we offer a competitive solution to cover all your needs in diesel hydrotreating.

HYT-6319	A high-performance hydrotreating catalyst to achieve a high volumetric yield of diesel with the required cetane number, while operating at high-to-medium pressure.
HYT-6219	A price-efficient diesel hydrotreating catalyst to produce marketable diesel at high-to-medium pressure operation.
HYT-4118	A good desulphurization catalyst to achieve marketable diesel, even at low pressure operation with low hydrogen consumption.
HYT-9219	A high-capacity demetallization catalyst to enable processing a high proportion of coker and cracked stocks for stable operation.
HYT-9229	A high-capacity demetallization catalyst to enable processing a maximum possible proportion of coker and cracked stocks by trapping silicon and metal contaminants with good activity.

UNITY HYDROPROCESSING EQUIPMENT AND LICENSING

Maximize catalyst volume, extend reactor life, reduce risk and achieve greater profits. We look beyond simple reload requirements and actively identify opportunities for you to get more value from your assets.

GET PEAK REACTOR PERFORMANCE

Advanced catalysts are just the beginning. For years, Honeywell UOP and Crystaphase have worked together to boost unit performance.

Combining our catalyst and system experience with their unmatched expertise in foulant mitigation, we deliver unprecedented efficiency, stability and profitability by eliminating impediments to catalyst performance. Soluble and insoluble compounds are removed from feedstocks, thereby improving productivity and profitability.

With Honeywell UOP and Crystaphase, you can improve your reactor's safety and stability, protect your catalyst investment and run longer at higher throughput for greater profitability.

BOOST YIELDS WITH UNIFLOW™ HYDROPROCESSING REACTOR INTERNALS

Using innovative vapor/liquid tray technology to provide optimized flow distribution, Honeywell UOP Uniflow™ reactor internals deliver significant performance gains over a wide range of operating conditions and provides you with:

- Improved product quality and/or yields
- Longer catalyst cycle length
- Improved reliability and safety with reduced potential for temperature instability
- Reduced turnaround time due to ease of access and maintenance
- Resistance to fouling due to large flow openings and sufficient space for any scale accumulation

CATALYST INNOVATION

At Honeywell, we've made sustained investment in catalyst innovation a top priority — not just in the technology, but in the process behind it. We're focusing our R&D spend where it matters most, guided by the voice of our customers. Advances in material science are driving longer catalyst life, higher yields, and step-change improvements in performance — not just incremental gains. We've strengthened our manufacturing excellence to improve quality and shorten lead times, ensuring we meet the growing demand from refiners and renewable fuel producers alike.

And that investment is paying off. We have a full pipeline of new products launching across renewables, hydrotreating, and hydrocracking — each designed to deliver higher yields, better selectivity, and longer cycle life. From next-generation hydrocracking catalysts to breakthrough NiMo hydrotreating solutions and new renewable and compressing dewaxing catalysts, we're redefining what's possible in catalyst performance.

But innovation doesn't stop at the reactor. Through our pilot plants, we co-develop solutions side by side with our customers, testing specific feeds and objectives to ensure every catalyst delivers real-world value. Our recent competitive wins in the region are a strong validation of that approach. The sustained level of investment and collaboration we're driving today is a true differentiator for Honeywell. It's an exciting time — innovation in catalysts is one of my top priorities as a leader, and it's central to how we're helping our customers grow, profit, and transition toward the energy systems of the future.

For more information
www.honeywell.com

Unity Hydroprocessing Complete Catalyst Solutions - Ungated Brochure 20251202 | 2.2 | 12/2025

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