Best performance in a supporting role
Introduction

The people at Umicore represent a global materials technology group that focuses on application areas where unique expertise in chemistry, material science and metallurgy make a real difference. As such, we are the chemistry of your success.

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The chemistry of your success

We understand the rapidly changing needs of our global clients. That is why we are experts at providing innovative chemical solutions. Homogeneous catalysts, APIs, commercial-scale manufacturing and supply chain expertise are just some of our other merits. We have a passion for creating the products and services our customers need – today and tomorrow.

In addition to this, we offer an integrated partnership approach to research, development and production. It is a proven method that ensures innovation and support continue throughout a product’s life cycle.

Finally, understanding individual applications is key to everything we do. It enables us to translate ideas into solutions and to better process customer needs.

We listen
Of all the things we do, listening is the one we do best. Why? It is the backbone of our tailor-made metal-based chemistry solutions and a precondition for developing novel homogeneous catalysts, market-leading APIs, and CVD (chemical vapor deposition) precursors.

Listening is what it takes to provide chemical manufacturing solutions of every size. It helps create the supply-chain expertise that is required to support our customers’ current and future processing technologies. It is the basis for a partnership approach to research, development and manufacturing. And, it tells us what is needed to back up these benefits with reliable service and support.

We understand
We are experts in addressing our customers’ changing requirements. We quickly translate experience and creativity into cutting-edge chemistry solutions. And, we have what it takes to transform metals and other materials into high-tech substances for a wide range of business sectors:

» Chemical Industries: here we have developed a wide range of advanced homogeneous catalysts and related services.
» Energy & Environment: this market segment relies on our precious metal solutions, for example, to manufacture catalytic converters or on our electro-catalysts for assembling fuel cells.
» Pharmaceuticals: this industry has been formulating our highly potent platinum APIs for decades. It also profits from using our advanced homogeneous catalysts.
» Electronics: businesses thrive on our innovative cross-coupling catalysts to efficiently manufacture electronic chemicals. They also prefer our high purity metal-based complexes for chemical vapor depositions.

We innovate
We are constantly learning, innovating and investing in areas that allow us to produce the most effective chemicals and catalysts. This approach helps us to maximize product quality while minimizing costs and delivery times.

You succeed
We have created an open, efficient environment that focuses on meeting customer objectives. No wonder our experts are better able to collaborate with manufacturers the world over to increase profitability.

Customers have come to expect more from Umicore Precious Metals Chemistry than “commodities”. And so they should.
» We give their businesses a competitive edge.
» We optimize every gram of their precious and non-ferrous metals.
» We develop tailor-made solutions.
» We manage transactions.
» We streamline recovery cycles to help eliminate waste.

Innovation made. Easy.
At Umicore Precious Metals Chemistry we do all we can to complement our customers’ innovations by developing and manufacturing the products they need to succeed.
High standards at work

R&D, production quality and technological expertise. These are key components of sustainable innovation-led growth. Thus, our first priority is to customize services and products to better match customer requirements.

We collaborate
Before we can help our customers satisfy their demands, we’ve got to understand them. That’s why we work with the best and the brightest (universities, research centers, customers, industrial partners) to hone our competitive edge. Yes, teamwork takes time and effort. But it is essential if we are to create products that deliver the most effective solutions.

We share
Our innovative R&D experts are involved in joint projects to ensure a constant knowledge transfer in their respective fields. By sharing know-how we develop best-in-class results. By doing all we can to be better, it’s easier for our customers to be their best.

We demand
First-rate products require state-of-the-art technology and equipment. So, to maintain consistency, all of our strategically located plants are designed to meet the same stringent standards. Whether we produce 1kg, 10kg, or multiple 100kg batches, our quality remains consistently high.

We control
When our customers benefit so do we. Thus, we promote the skills that are essential to producing exceptional metal-based chemicals. We use advanced analytical equipment and methodologies to maintain a closed-circuit control system along the entire production supply chain. Our transparent checks-and-balances program means that every gram of metal we are entrusted with is properly processed.

We deliver
We serve demanding businesses in challenging markets. It is little wonder, therefore, that we seek to surpass industry standards. That’s what it takes to deliver precisely the solutions and materials our customers want. A passion for innovation inspires us to continuously initiate strategies that will improve methods and processes. We even help to enhance cost structures.

Customers approve
Our quality-management and production systems are clear-cut, reliable and safe. And our products are regulated, certified and proven. As a result, Umicore’s analytical department is certified for the accuracy, the reproducibility and the high quality of its methods. Thanks to batch-to-batch consistency, the reliability of our manufacturing procedures and a proven quality management system, we are able to quickly identify and remove materials that could be out of spec.
Being exact comes naturally to us. Take detergents for example.
Making a world of difference

Umicore Precious Metals Chemistry focuses on different application areas. Take health-care products for example. Here our expertise in chemistry, catalysis, the manufacturing of toxic or sensitive materials, regulatory affairs and local markets give our customers real market advantages – worldwide.
Local, global support
Is your business active in such markets as India, Japan or Brazil? Then you’re going to appreciate our “glocal” support even more. Umicore Precious Metals Chemistry’s production plants and customer service sites ensure timely deliveries. We will also help you with logistical tasks – whenever needed.

Reliable assistance
Our management services are easily adapted to your existing business model. They include R&D activities, worldwide industrial scale manufacturing, logistics and the administration of trade activities. We can support different transaction models. And we are willing to help facilitate the purchasing, financing or leasing of your metal.

Production flexibility
Do you need a few kilograms or several metric tons of material? No problem. Do you require something different? Something new? You got it! We can quickly develop the materials that best suit your needs. Who knows, you may even want us to install a special facility.

Delivery made. Easy.
Our service personnel will gladly work with your supply chain, production, quality-management and regulatory-affairs teams in Europe, the Americas and Asia. So, whether the issue is EHS (Environment, Health and Safety), product storage, handling, shipping, materials sourcing or recycling, we’re just one phone call away.

Product life cycle management
Umicore has developed highly effective and sustainable metal recovery technologies that are tailor-made to save you money. Our “closed loop” approach to product development and manufacturing helps to ensure the economic viability of a process. This is also true for our metal access, our metal management, our metal separation and metal recovery activities. In the OXO industry, for example, without our rhodium recovery technology, the hydroformylation process would not be competitive.

It all adds up
We understand the rapidly changing needs of our clients throughout the world. And we offer them a long-term collaborative approach that makes innovations possible and provides the continued support they require throughout their products’ life cycles.
Our market expertise: your advantage

Why do businesses that produce everything from specialty chemicals, performance materials, energy and environmental products to health or electronic products take advantage of our advantages? We bring together markets, applications and technologies to provide them precisely the “precious” materials they require.

Chemical industries – catalysts for success

Everything we do is aimed at better serving our customers. Agrochemical, fine and specialty chemical industries benefit from our advanced homogeneous catalysts. No wonder three of the technologies we support have recently won Nobel recognition. Cross coupling, metathesis reactions and chiral catalysis play a leading role in the chemical industry!

OXO synthesis: We have more than 20 years’ experience in OXO synthesis using our rhodium hydroformylation catalysts and closed loop metal recycling concept.
- Extensive Rh catalyst hydroformylation portfolio
- Closed loop recycling concept for maximum metal recovery
- 20+ years’ market leadership

Cross-coupling: Umicore CX catalysts are renowned for giving customers a world of advantages from the ground up:
- Pd(0) and Pd(II) catalyst precursors are compatible with the selected ligand
- Cost conscience Pd phosphine catalysts
- Alternative, easy to use, and highly selective Pd N-heterocyclic carbene complexes

Metathesis: We have significantly expanded the Umicore M metathesis catalyst family. Thus, we are better able to answer the needs of customers who want reliable and efficient access to a technology that has proven its superiority in their labs. We offer:
- Extensive range of modular active and selective metathesis catalysts
- Simple, customer-oriented business models
- IP included in the kg price

Performance materials – better catalysts mean better products

Silicone makers value the transparency of their polymer. Instrument makers value the accuracy of a tone. We value polymers that are extremely resistant, lighter and more affordable to manufacture. Our chemicals and catalysts lead the way in these areas – and many more. What is your high-performance requirement?

Hydroisilylation: Here’s why customers prefer our advanced Pt N-heterocyclic carbene catalysts:
- Highly selective and active complexes at lower catalyst loading
- Defined and robust complexes, resistant to air and moisture
- The avoided formation of Pt colloids and by-products

Plating: Umicore Precious Metals Chemistry is one of the leading providers of precious metal solutions for electroplating. We offer:
- An extensive portfolio of precious metal based solutions
- Custom development available without sacrificing consistent quality
- Expert and competitive precious metal management

Metathesis: Metathesis reactions allow our customers to produce polymers with significant physical and chemical advantages. As a result, they benefit from either their viscosity before curing or their chemical resistance as composites. The Umicore M catalyst family includes:
- An extensive range of modular active and selective metathesis catalysts
- Simple, customer-oriented business models
- IP included in the kg price

Energy and environment – precious metal catalysts for sustaining life

At Umicore sustainability isn’t just talk. It’s action! Our automotive catalytic converters clean the air. Our expertise in manufacturing electro-catalysts for fuel cells electrifies the future. And our PEM water electrolysis technology helps to convert water into fuel.

Fuel cells: We do a lot more than focus on electro-catalysts for sustainability. We offer:
- Industrial scale manufacturing capabilities
- Elsyt catalysts or custom designed electro-catalysts

Automotive catalytic converters: Umicore is synonymous with emission control catalysts. Our proficiency has made us experts in developing the most appropriate precious metal solutions – on a large scale!
- Worldwide production units
- Custom technical support for proper catalyst development

At Umicore, sustainability is not just talk. It’s action! Our automotive catalytic converters clean the air. Our expertise in manufacturing electro-catalysts for fuel cells electrifies the future. And our PEM water electrolysis technology helps to convert water into fuel.
HEALTH – QUALITY SOLUTIONS FOR QUALITY LIVING

Whether you’re a highly potent drug manufacturer, or your challenge is ring closing metathesis, or you want a palladium catalyst for your cross-coupling reaction, or you require a complex hydrogenation reaction, or... we have the solution.

Thanks to our experience in common business practices, our constant innovation and our focus on quality, we are more than willing to share drug-manufacturing responsibilities. Contact us for details on how we can speed you to market.

Highly potent APIs: Proper active pharmaceutical ingredient (API) quality is crucial. That’s why so many businesses come to us for fast and reliable solutions:
- We offer a portfolio that includes Oxaliplatin, Carboplatin, Cisplatin and other highly potent organic molecules
- We meet USP (US Pharmacopeia), EP (European Pharmacopeia), IP (Indian Pharmacopeia) and customer specific requirements
- We are proud of our European Pharmacopeia (CEP) Certificates of Suitability, our certified cGMP-status and the drug master files (DMF) that we keep on our products
- We provide exclusive development and synthesis projects for generic and branded industries

Advanced homogeneous catalysts for selective chemistries: Our catalysts enable the sophisticated chemistry that is often required to efficiently synthesize a pharmaceutical intermediate.

Cross-coupling: from lab to production, our cross coupling catalysts provide off-the-shelf solutions for your applications. They include:
- Pd(0) and Pd(II) catalyst precursors compatible with the selected ligand
- Cost conscience Pd phosphate catalysts
- Innovative Pd N-heterocyclic carbene catalysts

Metathesis: Looking for an efficient way to synthesize large-membered rings? Using a metathesis step is likely to be an efficient alternative. The synthesis of some of the latest anti-HCV drugs has shown that it is industrially feasible. Best of all, we are sure to have the appropriate catalyst in our Umicore M catalyst family:
- An extensive range of modular active and selective metathesis catalysts
- Simple, customer-oriented business models
- IP included in the kg price

Chiral catalysis: Many drugs that have been developed in the last 20 years contain a chiral center. This has triggered the development of efficient and selective enantioselective catalysts that aim to synthesize the targeted enantiomer. The results:
- Comprehensive range of Rh, Ru, Ir based precursors
- Reliable access to today’s most powerful ligand families
- Modular chiral metal-ligand complexes ranging from the most versatile ligand based MLs to custom-manufacturing of special complexes

ELECTRONICS – ADVANCED PRECURSORS FOR THIN FILM DEPOSITION

Highly pure organometallic and volatile precursor materials for gas phase deposition reactions are used in the LED industry and the silicon semiconductor industry. Here our products add key functionalities to thin films in electronic devices.

In modern semiconductor devices an increasing number of elements from our periodic system are needed to keep pace with Moore’s law. The manufacturing processes of electronics are becoming more and more complex. This increases the need for new, advanced precursors: highly complex materials, which selectively react to a desired thin film under very mild reaction conditions.

Ru: Umicore Precious Metals Chemistry offers:
- Standard and customized ruthenocenes
- Highly pure and crude quality
- High vapor pressure

CX: From lab to production, our cross coupling catalysts provide fast and reliable solutions for your applications and developments that include:
- Pd(0) and Pd(II) catalyst precursors compatible with the selected ligand
- Cost conscience Pd phosphate catalysts
- Innovative Pd N-heterocyclic carbene catalysts
Of course we are happy about every goal.
And every sharp LCD screen.
Take liquid crystals for example.
Let’s talk!

Who you choose to be your precious metals chemistry partner is up to you. But, now that you know who we are, what we offer and where you can find us, we hope making that decision will be a lot easier.

One thing is certain
Our unsurpassed level of commitment makes us the right choice for your business.

» We offer the right solutions for your specific requirements.
» We provide logistical and cost advantages.
» We ensure adequate supply capacities.
» We back our products and services with the latest technologies, skills and research resources.
» We pledge high quality and fast delivery times.
» We use advanced metal recovery and recycling methods.
» We generate the sophisticated precious metals management options you require to achieve optimum profitability.

Teamwork really works
The moment you contact us to discover the benefits of our services, products and options, you will begin to understand how our advantages can be used to your advantage. Teamwork, respect, openness, innovation and commitment, as well as trust and reliability define our basic business principles.

Working together we will create a dynamic partnership based on mutual expertise and experience. We will focus on your needs. And everything we do will have your success in mind:

» Synthesis of highly potent APIs
» Organic, inorganic and organometallic chemistry
» R&D, process development and optimization, and product management
» Handling of high-purity products, highly toxic, sensitive and pyrophoric materials
» Analytical method development and method validation

Learn how Umicore Precious Metals Chemistry can make your business more successful than ever before. Contact us today.
Improvement is always on our mind. And in your mouth.
Take menthol in toothpastes for example.