Portfolio for the pharmaceutical industry
Expertise across the entire value chain

At BASF, we know that innovation, speed-to-market, and cost-effectiveness are key to pharmaceutical companies. With our comprehensive portfolio and unparalleled skills at every stage of the pharmaceutical value chain, we provide the support you need to deliver on all three counts. What’s more, we foster effective collaboration and knowledge transfer between the teams responsible for our various products and services. So when you partner with us, you can count on truly end-to-end expertise.

Our offerings focus on specific phases of the pharmaceutical value chain – but are usually not confined to one phase.

Focused on your needs
BASF provides products and services for the pharmaceutical industry that enhance your competitiveness. We focus firmly on meeting your needs. As a result, BASF is not only a reliable and efficient supplier of standard products; we are also a trusted partner when it comes to developing tailor-made solutions and processes.

We continuously extend and enhance our range of products and services.

2005
Acquisition of Orgamol – a company with half a century of experience and expertise in custom synthesis

2010
Acquisition of Cognis – an expert in oleochemical excipients for solids and semi-solids

2012
Acquisition of Equateq – a global leader in the manufacturing of highly concentrated omega-3 fatty acids

2006
Acquisition of Engelhard – the expert in catalysts, making BASF the global leader in catalysis

2012
Acquisition of Novolyte – a manufacturer of specialty chemicals such as high performance solvents and aryl phosphines

2013
Acquisition of Pronova BioPharma – a pioneer and leading player in omega-3 fatty acids for the pharmaceutical industry
Leading the way in innovation
Our success – and yours – is built on research and innovation. At BASF, that means more than just new products; it also encompasses enhanced processes. Around 10,100 BASF specialists worldwide leverage our extensive experience and expertise to conduct ongoing R&D across virtually all chemical disciplines.

Interdisciplinary and international collaboration, including cooperation with external partners such as universities and industry players, helps ensure we remain at the leading edge.

Verbund – the power of networking
BASF’s Verbund is one of our greatest assets when it comes to getting the best out of our resources. Our Production Verbund links our individual plants, enabling us to create efficient and reliable value chains – ranging from basic chemicals through to end-user products. We also apply the Verbund principle to our research and knowledge management, and to teamwork among BASF employees. Pharma experts from all BASF divisions share their knowledge to generate new ideas – and work hand in hand with you to develop solutions that create value for all stakeholders.

Ensuring high quality standards
Consistently high quality is our top priority – and not just because pharmaceutical production is subject to stringent regulations. We also have our own rigorous internal standards.

Our manufacturing facilities are certified to ISO 9001 and fulfill current Good Manufacturing Practice (cGMP) standards, where required. They are regularly inspected by national and international authorities, including the US Food and Drug Administration (FDA).

New European chemicals legislation (REACH) places even greater demands on companies with regard to product stewardship and information on substance safety. To help you achieve REACH compliance, BASF has pooled its skills in EU chemicals legislation, and offers made-to-measure service packages.

At BASF, we leverage a wide range of technologies and reactions.

These include:
- Acetylene chemistry
- Alkali metal chemistry
- Alkoxilation
- Amination
- Asymmetric borane reduction
- Asymmetric hydrogenation
- Asymmetric synthesis
- Azide chemistry
- Biotransformations
- Bromination
- Carbonylation
- Chinoline synthesis
- Chlorination
- Chloromethylation
- Cryogenic reactions
- Diborane chemistry
- Electrochemistry
- Enzyme technologies
- Grignard reactions
- HCN chemistry
- Heterogeneous catalysis
- High-pressure reactions
- High-purity metal salts
- Hydrazine chemistry
- Hydroformylation
- Hydrogenation
- Hydroxylamine chemistry
- Ionic liquid technologies
- Metal salt chemistry
- N-, O-Heterocycles synthesis
- Olefin/Polyene chemistry
- Oleochemistry
- Organometallic chemistry
- Organyzinc chemistry
- Oximation
- Phosgene chemistry
- Phosphorous chemistry
- Photochemistry
- Polymerization (all types)
- Reduction
- Suzuki coupling
- Wittig reaction

The following pages provide an overview of our portfolio. For further details, please see our websites.
Metabolite Profiling

Metanomics Health, a BASF affiliate, applies Metabolite Profiling (Metabolomics) to identify and to validate biomarkers for drug discovery and development, diagnostics, and nutritional research. This enables and accelerates various phases of the drug development value chain.

Services
Metabolite profiling services for drug development
- Increased mechanistic understanding of development compounds
- Development of prognostic and predictive biomarkers
- Steady state & dynamic metabolite profiling

Solutions
Metabolomics solutions for cancer metabolism
- New cancer drug target identification & validation
- Understanding of drug resistance mechanisms
Bioprocess optimization
- Optimization of media formulations
- Improvement of expression systems (metabolic engineering)

Products
MetaMap®Tox – predictive in vivo toxicology database
- Early predictive safety testing (toxicology)
Diagnostic biomarker (clinical biomarker CHF)
- Diagnosis and early detection of congestive heart failure (CHF)
Quality biomarker
- MxP™ QC service (pre-analytical plasma sample quality check)

www.metanomics-health.de

Catalysts

At BASF, we continuously apply our expertise in surface and material science to develop new catalytic technologies. Our state-of-the-art precious-metal deposition technologies allow us to fine-tune formulations to the specific needs of our customers’ chemistry and equipment. Our comprehensive precious-metal services enable you to focus on metal application rather than on non-value-added services (e.g. transit or recovery).

What we offer:
- A comprehensive portfolio of homogeneous and heterogeneous catalysts for fine-chemical applications
- Global manufacturing and R&D resources
- A wide range of selective (precious-metal) adsorbents
- Deep understanding of customers’ processes and needs
- One of the broadest offerings of customized base-metal and precious-metal catalysts available
- Full-loop precious-metal services
- Excellent technical service in the business

www.catalysts.basf.com/fine-chemical
Reagents

BASF’s portfolio includes organic reagents and inorganic specialty reagents (e.g., MeCBS), various boranes, specialty bases and organozinc building blocks, as well as chiral amines that facilitate reactions with high selectivity. To support your development work from lab to launch, all reagents are available in quantities from kilograms to tons.

Organic reagents
- Chiral amines
- Diazabicycloundecene (DBU P)
- R-Mandelic acid
- Triphenylphosphine (TPP)
- Diphosphorylchlorophosphine
- Triethylamine
- Piperidine
- Pyrrolidine
- Hüning’s base
- Formic acid
- Methanesulfonic acid

www.pharma-intermediates.basf.com

Inorganic specialty reagents
- Alkali amides
- Alkyl boranes
- Alkyl metal alcoholates
- Amine-boranes
- Borane complexes
- Chiral boranes
- High purity iron salts
- Hydroxylamine derivatives
- Suzuki coupling reagents

www.pharma-intermediates.basf.com

Solvents

BASF produces high-quality solvents that meet the specific needs of the pharmaceutical industry. We also offer comprehensive packages of auxiliary services and newly developed solutions for selected products. An outstanding example is our THF pharma super dry, which has an extremely low water content (50 ppm), and is the solvent of choice for many water-sensitive reactions.

Selected products:
- N,N’-Dimethylpropylene urea (DMPU)
- N-Methylpyrrolidone (NMP) and N-Methylpyrrolidone Life Science (NMP Life Science)
- Tetrahydrofuran pharma (THF)
- Dimethylformamide (DMF)
- N,N-Dimethylacetamide (DMAC)
- Dioxane and 1,3 dioxolane
- Kollisolv®
- Glymes
- Tert-Amyl Alcohol (2-Methyl-2-Butanol)

www.pharma-intermediates.basf.com

Protective Groups

In numerous complex synthesis routes for APIs, some functional groups have to be shielded against conversion in a specific reaction step. For this purpose, BASF offers a range of compounds that provide the necessary protection in your transformations. Various types of functions, ranging from alcohols to amines, can be protected.

Selected products:
- Methyl chloroformate
- Benzyl chloroformate
- Dihydropyran (DHP)
- Pivaloyl chloride
- Benzophenone imine

www.pharma-intermediates.basf.com

Dr. Daniela Proske is a firm believer in the power of global collaboration.

When her customer – the US subsidiary of a European-based pharmaceutical company – requested a catalyst to optimize the production process, Dr. Daniela Proske, a BASF expert in intermediates, knew exactly who to call: her Dutch colleague, Dr. Jim Brandts, at the Catalysts division. He designed a new type of catalyst, which was supplied from the catalyst plant in the US. And when the customer transferred development and scale-up to Europe, the Catalysts division followed suit, moving activities to Rome. What’s more, when commercial production got underway at the customer’s Asian plant, local BASF staff were on hand to manage catalyst shipments.
Building Blocks

BASF’s innovative technology platform and our extensive expertise in biocatalysis enable us to manufacture a wide range of building blocks. Our offerings include a large number of chiral intermediates and non-chiral specialties, e.g., heterocycles and acid chlorides. Under the ChiPros® trademark, BASF provides its customers with a broad portfolio of chiral amines and amino alcohols.

ChiPros®: e.g. R-2-Chloromandelic acid, S-Phenylethylamine, R-Phenylethylamine

Heterocycles: e.g. piperazine, N-alkyl piperazines, imidazoles, pyroles, pyrazoles

Acid chlorides

Specialty amines: e.g. 2,6 Xyldine, tert-butylamine, 3-Amino-1-propanol, hydroxyethylmorpholine

www.pharma-intermediates.basf.com

Custom Synthesis

BASF offers exclusive development and manufacturing services for active ingredients and advanced intermediates. Our team of experts provides support throughout the entire drug lifecycle – from development, through launch and commercialization – ensuring reliability of supply and continuous improvement. BASF’s global research and development network offers an unparalleled number of key value-adding technologies. Our plants handle complex, hazardous chemical processes, enabling us to fulfill highly challenging customer project requirements.

Manufacturing services (650 m³ cGMP capacity)
- Kilo lab
- Pilot plant
- 11 multi-purpose production plants in Evionnaz (Switzerland), Saint-Vulbas (France) and Minden (Germany)

Specific technologies
- Phosgenation
- Catalytic hydrogenation
- Cryogenic reactions
- Azide chemistry
- Cyanation
- Chloromethylation

www.custom-synthesis.basf.com

Dr. Raphaël Gabioud and his colleagues know the value of teamwork.

Dr. Raphaël Gabioud, an expert in custom synthesis at BASF, was tasked with enhancing the production process for an advanced intermediate used in a complex API. He soon realized the synthesis route could be improved by greater selectivity. Moreover, he knew that the necessary chiral amine could be developed by our in-house specialists – Prof. Dr. Klaus Ditrich and his team. By drawing on BASF’s unique global network of skills and resources, he was able to offer a solution tailored to the customer’s needs.
Generic APIs

Our outstanding research and development facilities are matched by our global customer service and support networks. You can depend on us every step of the way in developing commercially and clinically successful pharmaceutical products.

Selected applications
- Analgesics
- Anesthetics
- Nervous system
- Dermatology
- Omega-3 fatty acids
- Respiratory system
- Stimulants
- Urinary system
- L-menthol

www.pharma-ingredients.basf.com

Excipients

When it comes to a broad portfolio of excipients with exceptional potential, it’s hard to surpass BASF. The product spectrum – particularly the Kollidon® and Kollicoat® ranges – fulfills all the functional and regulatory requirements for excipients used in the production of tablets, creams, ointments, sprays or drops.

Applications
- Binders
- Coatings
- Controlled release
- Directly compressible excipients
- Disintegrants
- Excipients for orally disintegrating tablets
- Excipients for hot-melt extrusion
- Solubilizers, solvents and co-solvents
- Excipients for topical formulations

Selected products
- Soluplus®
- Kollicoat® Smartseal 30 D
- Kollidon® VA 64
- Ludiflash®
- Kolliphor® TPGS

www.pharma-ingredients.basf.com
The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. (09/2013)

BASF is the world’s leading chemical company: The Chemical Company. Its portfolio ranges from chemicals, plastics, performance products and crop protection products to oil and gas. We combine economic success, social responsibility and environmental protection. Through science and innovation we enable our customers in almost all industries to meet the current and future needs of society. Our products and system solutions contribute to conserving resources, ensuring healthy food and nutrition and helping to improve quality of life. We have summed up this contribution in our corporate purpose: We create chemistry for a sustainable future.

www.pharma.basf.com