

A photograph of an offshore wind farm with several white wind turbines in a line across a blue sea under a clear sky. The perspective is from a low angle, looking up at the turbines.

Progress Report

**WE MAKE
SUSTAINABILITY
YOUR SUCCESS
FACTOR.**

ASKCHEMICALS
We advance your casting



TAKING ON CHALLENGES – SHAPING THE FUTURE.

As one of the world's largest suppliers of foundry chemicals, we have a responsibility to act sustainably. In doing so, we take all facets of sustainability into account. We not only act sustainably to protect the environment, but also in the interests of our employees and business partners. With our innovative products, we support our customers around the world in producing more environmentally friendly solutions in a manner that is employee-friendly, and efficient.

A close-up photograph of a scientist wearing a white lab coat and clear safety goggles. The scientist is looking down at a test tube held in their gloved hand. In the background, there are several other test tubes in a rack, some containing blue liquid. The overall scene is a laboratory setting.

**FOR US,
SUSTAINABILITY
IS MORE THAN
A PROMISE.**

EFFECTIVE, ESSENTIAL, PROMISING – OUR SUSTAINABILITY CONCEPT.

We have been engaged for quite some time in making our working methods and our products more efficient, environmentally friendly and user-friendly. For us, sustainability is a long-term challenge that we have taken on while utilizing many different measures.

We do not see this only as a contribution to climate and environmental protection. Sustainability is also a decisive success factor for us. With sustainable behavior, we are able to save on materials, conserve resources and also reduce emissions and costs, increasing our competitiveness. We pass on our sustainable way of working to our customers with products and measures which support them in acting in an environmentally friendly and economically sustainable manner.

MORE THAN A RESOLUTION

With our sustainable working methods, we continually challenge ourselves. For example, we regularly undergo with selected sites a voluntary CSR rating through EcoVadis. The assessment is conducted with a focus on the topics of environment, work practices, human rights, fair business practices and sustainable procurement. This enables us to identify our strengths and weaknesses and focus on areas where optimization is required.

For us, sustainability is not just a promise. It is a motivation to continually improve.



A person stands on a rocky peak in the bottom left corner, looking out over a vast, hazy landscape. The sun is a bright, glowing orb in the upper right corner, casting a warm, golden light across the scene. The sky transitions from a deep blue at the top to a hazy orange near the horizon. The landscape below is a thick, hazy expanse of clouds or mist, with distant hills visible on the horizon. The text is overlaid in the center, consisting of four green rectangular boxes stacked vertically, each containing a line of white, bold, sans-serif text.

**SEEING THE
FULL PICTURE,
OFFERING SOLUTIONS
IN DETAIL.**

DEVELOPING EFFECTIVE SOLUTIONS – OUR EXPERTISE FOR SUSTAINABILITY.

Our customers have demanding requirements of us and our products – we seek to fulfill these at all times. This is why we hold these requirements to be of personal interest and continually strive to meet these challenges with wholehearted commitment. Only then can we offer our customers optimal solutions and products for greater sustainability.

Our measures are comprehensive because we view the production process as a whole. By doing this, we can make proper adjustments where necessary, and assist our customers in achieving greater sustainability through targeted measures. We not only support them in reducing the consumption of resources and their emissions, but also in increasing the quality of their products. Thus, the application of sustainable solutions offers a clear economic benefit to the users.





**SET ONE GOAL –
EXPLORE
MULTIPLE PATHS.**

PROTECTING MORE THAN THE ENVIRONMENT – OUR SUSTAINABILITY COSMOS.

We orient ourselves not only externally toward the customer in the implementation of sustainability measures at ASK Chemicals, but also internally in our own processes, and seek to act sustainably in a comprehensive sense. We pursue this in nearly all areas of the company.

HUMAN RESOURCES

The success of ASK Chemicals and its subsidiaries greatly depends on the dedication and skill of our employees. Foundry engineers, chemists, business managers, sales people and technical specialists from diverse backgrounds and different ages work side by side. This diversity opens up new perspectives, promotes creativity and innovation, and ultimately drives the success of our company. ASK Chemicals recognizes the importance of diversity to the company's success and actively encourages it. Additionally, we develop measures and initiatives to increase our attractiveness as an employer.

MANUFACTURING FACILITIES

Our production facilities are diverse, both in terms of manufactured products, as well as resource use and energy requirements. With our safe facilities we guarantee occupational health for our employees and reduce the environmental impact. The largest plant is located in Wuelfrath. Here, for example, we minimize the environmental risk with a state-of-the-art protection system. From there we supply well-known foundries around the world – with a clear European focus. Our energy-intensive sites are ISO 50001 certified. A consistent environmental and energy management is the basis for implementing meaningful energy efficiency measures, that have a direct or indirect positive impact on the environment. ASK Chemicals is ISO 14001 certified at all major production sites, in part according to DIN EN ISO 50001 and BS OHSAS 18001 (future ISO 45001). At all our production sites, our employees are careful to conduct themselves in a sustainable and quality-oriented manner.

RESEARCH & DEVELOPMENT

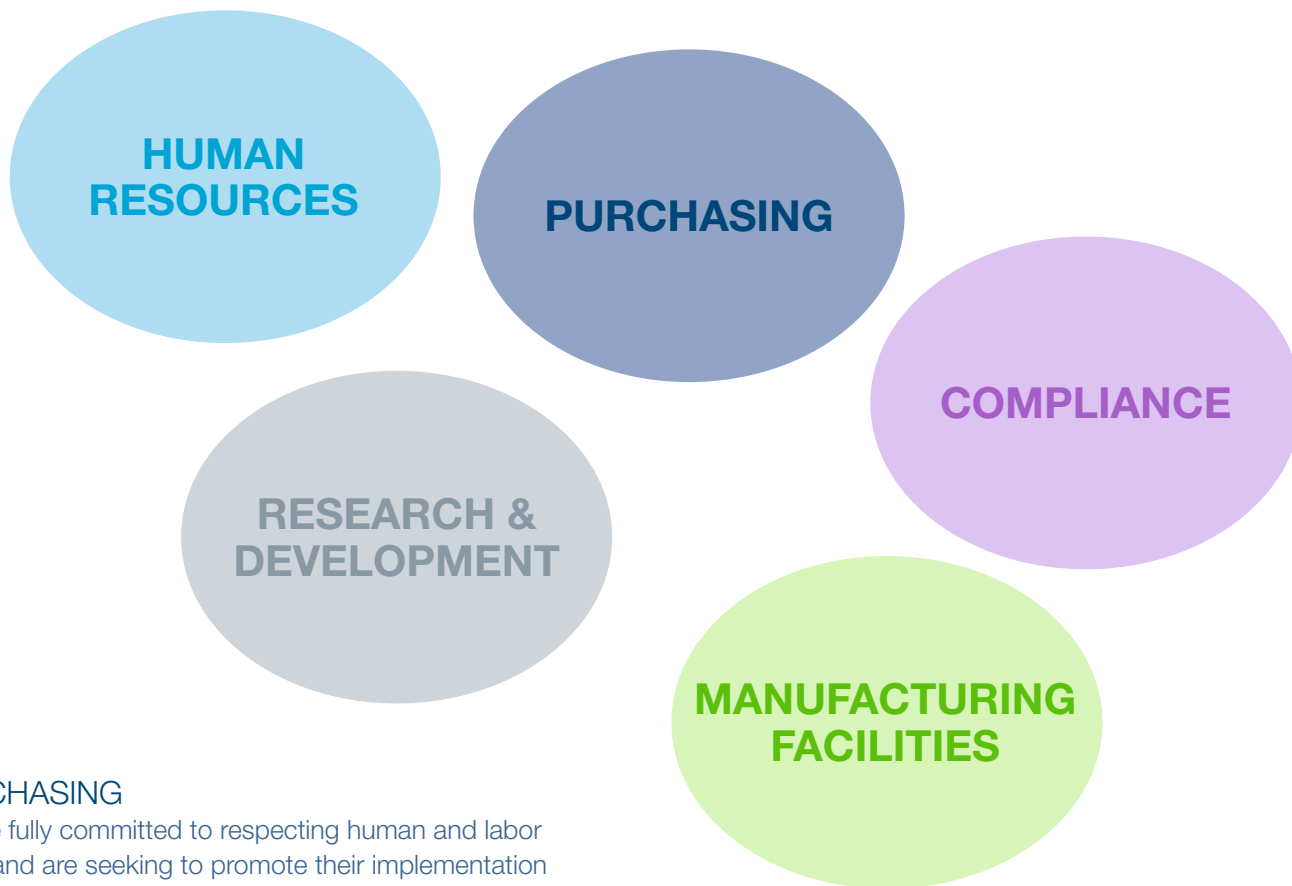
We continually work on the development of sustainable solutions for our customers. We pursue different approaches to accomplish this. One approach is certainly to produce products based on renewable raw materials. But this is only one aspect of product development. We must keep the entire lifecycle of the products in view, and thereby ensure the sustainability of the manufacturing process, equally taking into account the performance profile of the end products. In the first place, we focus on increasing the effectiveness of our products, thereby creating added value for our customers. If we use our products to improve the efficiency of a foundry, for example, through lower rejects or minimized consumption of materials, then a relevant vehicle for the reduction of CO₂-emissions through energy conservation arises. We also develop products that contain less harmful substances in order to reduce the risk of harmful effects on the environment, health and safety.

COMPLIANCE

It is the guiding principle for all employees, managers and members of management (collectively, the „employees“) within the ASK Chemicals Group to conduct themselves in accordance with existing laws and corporate policies. As a result, the ASK Chemicals Group has adopted compulsory policies worldwide that encourage and support employees with the integration of these requirements into their day-to-day actions, in order to avoid violation of the laws and corporate policies. Various measures, such as employee training, checklists, event-related compliance meetings, the introduction of a global integrity system, etc., help to anchor compliance permanently and prominently within the corporate culture.

PURCHASING

We are fully committed to respecting human and labor rights and are seeking to promote their implementation throughout the value chain. We expect our business partners to respect human and labor rights as well as health and safety at work. Child labor and forced labor are not tolerated.



A person wearing a white lab coat is using a multi-channel pipette to transfer liquid from small vials into a rack. The background is a bright, clean laboratory setting. The text is overlaid on the image in a green box with white text.

**FOR BIG
CHANGES –
TAKING MANY
SMALL STEPS.**

DIVERSE MEASURES – OUR SUSTAINABILITY FORMATS.

What do our measures and products achieve? And how do we meet our sustainability standards and those of our customers? Here, we present selected activities and products with which we have implemented sustainability at various levels.

XPURIS

With the xpuris air cleaning systems, emissions from the exhaust air can be significantly reduced (or clearly below permissible limit values) in production facilities. Thanks to a demand-controlled mode of operation, only as much energy is used as is required for the exhaust air purification.

REDUCTION OF CO₂-EMISSIONS

For nearly 5 years at our main plant in Wuelfrath, we have been implementing action plans with the aim of saving energy and increasing efficiency in the spirit of continuous improvement. Finally, we are also pursuing the goal of a sustainable reduction of the associated CO₂-emissions.

INOTEC

The inorganic binder system is 100 % emission-free and offers ecological, economic and technological advantages. These were identified and certified in the form of an environmental lifecycle assessment.

ECOCURE BLUE

The first cold-boxbinder with no hazardous ingredients reduces BTX emissions during casting, thus ensuring a high environmental compatibility.

GLOBAL EMPLOYEE ENGAGEMENT

Global mobility enriches and promotes. Getting to know new cultures and working environments is equally enriching and encouraging for the further development of our employees. For a leading international supplier of foundry solutions, building a team of people who have learned to think globally and act locally is invaluable. ASK Chemicals promotes global engagement within the framework of projects with cross-border collaborations and assignments at other locations.

PROMOTING YOUNG TALENT

We offer high-quality training programs that we regularly adapt to the demands of the company. The personal development of our apprentices is particularly important to us, because it is precisely in an internationally positioned company that a view beyond the immediate, as well as flexibility and team-oriented action are prerequisites for a successful participation within the company. We offer working students the opportunity to find their individualized entry into professional life. This gives them the opportunity to personally develop themselves further, and put the content of what they have learned during their studies into practice. As part of our talent management, we specifically develop young talent to prepare them for leadership positions within the company.

CERTIFICATIONS

ASK Chemicals is ISO 14001 certified at all major production sites. Additionally, the Wuelfrath and Unterneukirchen sites are ISO 50001 certified.

A large number of our production sites is also BS OHSAS 18001 certified.

PERFORMANCE APPRAISAL AND LEADING WITH GOALS

At the beginning of each year, ASK Chemicals concludes individual goal agreements with its employees. Work content and results achieved, technical and leadership skills, as well as the individual training needs of each employee are discussed, and concrete measures – such as trainings, project participations, etc. – are conducted. The overall objective is not only the consistent, quality assurance of the work, but also the increase in satisfaction and motivation for the employee, as well as the employer, but also the increase in satisfaction and motivation on the employer and employee side.

REPLACEMENT OF SVHC

We are continually working on solutions for substituting SVHC (Substances of Very High Concern).

SAFE FACILITIES

With our safe facilities, we can ensure the health of our employees is protected, and reduce environmental impact. Our resin production in Wuelfrath has a state-of-the-art protection system that goes beyond the usual standard.

JOINT EMERGENCY EXERCISES

In order to be prepared for emergencies, we regularly conduct joint exercises together with our employees and the local rescue services.

LITHIUM-FREE SOLUTIONS

Lithium is extracted at the expense of the environment. Particularly in South America, the exploitation of nature is being carried out in the wake of a drastic increase in demand. ASK Chemicals has been a driving force behind the development of lithium-free solutions for quite some time now.

OCCUPATIONAL HEALTH AND SAFETY

We want to achieve 100 % accident prevention at all ASK Chemicals plants and sites. For us, this goal is the proviso for living in a consistent safety culture. We are implementing this with various measures, such as Job Safety Analyses and the implementation of health promotion projects. A large number of our production sites is also BS OHSAS 18001 (future ISO 45001) certified.

ENERGY CONSUMPTION

Through consistent energy and environmental management, we have been able to reduce the specific energy consumption in our primary plant to just under 10 % (2016-2019).

MODERN WORKING CONDITIONS

ASK Chemicals meets the challenges of the modern work-place and facilitates flexible working. Various models have come into play, such as flexible working hours, additional free-time for older employees and the traditional home office. For this purpose, ASK Chemicals GmbH has already concluded company agreements with the employee representatives that substantiate and regulate these proposals.

SUSTAINABILITY ASSESSMENT

The assessment by EcoVadis creates added value for our company, because it evaluates the quality of our measures and allows us to determine the areas in which we can improve.

RESOURCE EFFICIENCY

We pay special attention to resource efficiency along the entire value chain: by conserving water and energy in the operation of our production plants, for example.

CODE OF CONDUCT

The Code of Conduct is an integral part of the ASK Group's Compliance Culture and encapsulates the values, principles and guidelines for the corporate conduct of all employees in ASK Chemicals Group, for all stakeholders.

WHISTLEBLOWER HOTLINE

In 2018, ASK Chemicals introduced an international whistleblowing system prior to the European Directive coming into force. It offers employees, suppliers, customers and other third parties the option to anonymously report compliance violations involving ASK Chemicals. The commissioned external service provider offers a wide range of reporting channels such as a hotline, web tool and email with each available in the native languages of all ASK locations. The reports are kept strictly confidential by a small circle of managers from the most relevant departments (Legal & Compliance, HR, EHS and Operations) to ensure the best possible response and action.

ASK+ME

With their enthusiasm, expertise and service orientation, our employees have made ASK Chemicals what it is today: one of the world's leading suppliers of foundry chemicals and auxiliaries. For this reason, it is important for us to provide our employees with the best support possible in their day-to-day challenges. With the ASK+ME initiative, we want to guide our employees through the labyrinth of the sometimes complex world of work. We believe specific practices help in making ASK Chemicals and its team even more successful and capable of mastering complex situations in the future: be brave, be connected, be positive, keep promises, create added value.

The background of the image is a dark, industrial scene. In the center, there is a large, arched opening, possibly a furnace or a tunnel, which is illuminated from within, casting a warm, orange glow. The surrounding area is dark, with various industrial structures and equipment visible. Numerous bright, golden-yellow sparks are flying through the air, particularly concentrated in the lower half of the image, suggesting a welding or grinding process. The overall atmosphere is one of intense industrial activity.

**HOW TO
ADVANCE BEYOND THE
SUSTAINABILITY TREND?
E.G. WITH INOTEC,
ECOCURE BLUE
AND XPURIS!**

MOVING TOWARD AN EMISSION-FREE FOUNDRY – OUR SUSTAINABLE SOLUTIONS.

An increasing number of foundries want to make their processes emission-reduced as an expression of their social responsibility and also due to regulatory requirements and emission guidelines. Foundry chemistry has therefore been researching and developing new products for many years in order to facilitate a reduction in emissions in the various sectors. Alongside this, new modular air purification systems are also being developed that will enable a reduction in emissions. We have achieved a significant contribution to this with INOTEC, ECOCURE BLUE and xpuris.

INOTEC inorganic binder technology is the ultimate solution for low-emission casting. However, there are technical and economic aspects such as the investment in heated molds that make access to inorganic technology difficult, or even impossible for small and medium-size foundries.

Our organic binders are technologically proven, highly productive and can be economically utilized in nearly every foundry. They are constantly being optimized to reduce the emission and odor levels, as the example of the ECOCURE BLUE technology illustrates. Nevertheless, due to their chemical properties, organic binders will always release emissions. Against this background and the ever stringent environmental regulations, product development in the area of organic binders is subject to technological limits from the emissions side, as well as with regard to occupational exposure limits.

As a result, ASK Chemicals has decided to not only continue optimizing its foundry-grade products, but to also assist foundries in tackling the challenges of emissions and occupational exposure limits with the founding of our xpuris Green-Tech start-up that offers modular ventilation systems.



INOTEC – FOR 100 % EMISSION-FREE

The inorganic and emission-free INOTEC binder system means 100 % sustainability. Along the value chain, from the purchase of raw materials through to the manufacturing processes of the binder systems as well as from their use to their disposal, INOTEC is more sustainable overall than existing organic binder systems such as Cold Box systems.

A comprehensive and comparative environmental lifecycle assessment with the INOTEC system and a Cold Box binder system has already been conducted by TÜV Rheinland. INOTEC received the highest possible rating in the environmental lifecycle assessment – INOTEC is more environmentally friendly than the comparative product.

INOTEC is equally convincing in economic terms:

The cleaning effort of metal molds in permanent mold casting is particularly low, and air treatment measures are completely eliminated. Faster solidification times due to reduced permanent mold casting temperatures facilitate an improved molded part quality and generally increase productivity.

INOTEC was awarded the BMW Supplier Innovation Award in 2014 for its highly innovative advantages.



ECOCURE BLUE – ULTRA-MODERN COLD-BOX BINDER WITHOUT HAZARDOUS SUBSTANCES*

With the development of ECOCURE BLUE, we have taken a significant step in highly innovative Cold Box technology. For the first time in the history of binder chemistry, we have succeeded in developing a Cold Box part 1 – components without labeling. ECOCURE BLUE contains no hazardous substances* and thus significantly contributes to the protection of the environment and employees. This technology facilitates a binder reduction of up to 25 % and an amine reduction of up to 75 %. Emissions and leachable phenols are significantly reduced with ECOCURE BLUE. And the BTXs are also decreased throughout the complete process. Alongside the smoke and odor reductions, additional advantages of ECOCURE BLUE include savings in logistics and storage.

From core production, to casting through demolding – ECOCURE BLUE reduces emissions throughout the complete process.

*according to CLP regulation

XPURIS – A COMPREHENSIVE SOLUTION FROM ONE SOURCE

The xpuris air purification systems provide tailored solutions for reducing emissions in exhaust air. In doing so, an excellent cleaning performance is provided through comprehensive total solutions. This means that the essential requirements for foundries – cleaning performance, operational safety, future-proofing and economic efficiency – are met through the application of xpuris. Not only is a higher operational safety ensured through a permanent monitoring of the cleaning system, compliance with the legal limit values are likewise ensured. The exhaust air purification is realized using a patented process and two different technologies: xpuris ACP (Advanced Catalytic Purifier) and xpuris UVP (Ultraviolet Purifier).



XPURIS ACP – EXHAUST AIR PURIFICATION THROUGH CATALYTIC OXIDATION

The xpuris ACP eliminates pollutants such as VOCs or amines from the exhaust air stream with highly efficient xpuris catalysts and low energy consumption. Liquid, or solid waste materials are completely avoided in this process. A sensor-controlled, control circuit permanently monitors the system.

XPURIS UVP – EXHAUST AIR PURIFICATION THROUGH UV PHOTO-OXIDATION

The UVP module removes pollutants such as VOCs, amines and benzenes through replicating the natural self-cleaning mechanism of the Earth's atmosphere and strongly amplifying it. In this process, the exhaust air flows through special UV-C light-producing tubes that convert natural oxygen into reactive oxygen with its radiation.

With xpuris, on-demand exhaust air purification becomes reality thanks to its ultra-modern control technology.

A close-up, low-angle shot of industrial machinery, likely a robotic arm or assembly line. The image shows various mechanical components, including metal brackets, screws, and a black cable management system. The background is slightly blurred, emphasizing the mechanical details in the foreground.

**ALWAYS THINKING
ONE STEP AHEAD –
TO BE SUSTAINABLY
SUCCESSFUL.**

FOR MORE EFFICIENCY , MORE ENVIRONMENTAL AND EMPLOYEE PROTECTION – OUR SUSTAINABILITY CLAIM.

With innovative solutions such as ECOCURE BLUE, xpuris and INOTEC, we have already taken a decisive step toward an emission-free future.

ECOCURE BLUE is free of hazardous ingredients, and thus significantly contributes to the protection of the environment and employees. Emissions can be reduced throughout the entire casting process. xpuris air purification systems complement ECOCURE BLUE technology with comprehensive solutions, because they meet the essential requirements of foundries. At the same time, they ensure greater operational safety and compliance with the legal limits. Owing to its modular design, the air purification system can also be expanded. We have rounded out our offering with INOTEC, our top product for 100% sustainability in the foundry process: The binder system is inorganic and thus completely emission-free and already TÜV-certified.

INTO AN EMISSION-FREE FUTURE

We at ASK Chemicals are constantly working on new measures and continually improving them. We quickly see where we can improve, and make proper adjustments where necessary.

Likewise, we will continue to optimize our products and develop new approaches for even more sustainable processes in the future. In this way, together with our employees and customers, we are paving the way for an emission-free future.

We are also making an important contribution towards greater efficiency, environmental protection and employee protection with:

Inorganic EXACTCAST feeders

Water-based coating

Lithium-free additives

MAGNASET Furan Binders

Inorganic and hybrid additives

PEP SET SILVER PUNB Binder

Solvent-free release agents and adhesives

The following marks are registered by ASK Chemicals GmbH, ASK Chemicals Metallurgy GmbH or ASK Chemicals LLC in one or more countries:

ALPHASET, ASKOBOND, ASKRONING, ASKURAN, BERANOL, BETASET, CERAMCOTE, CHEM-REZ, DENODUL, DISPERSIT, EXACTCALC, EXACTCAST, EXACTFLO, EXACTPORE, ECOCURE, ECOPART, FLEXPORE, FLEXPOUR, GERMALLOY, INFORM, INOBAKE, INOTEC, ISOCOTE, ISOCURE, ISO-FAST, ISOMAX, LINO-CURE, MAGNASET, MIRATEC, NOVACURE, NOVANOL, NOVASET, OPTIGRAN, OPTINOC, PEP SET, REMMOS, SMW-INSERT, UDICELL, VEINO, VELVACOAT, ZIP-CLEAN, ZIP SLIP.

Visit www.ask-chemicals.com/trademarks for a complete list of our trademarks.
Please contact ASK for any questions concerning the usage of these marks.

www.ask-chemicals.com/locations

This information is based on our current state of knowledge and does not represent assurance of the properties of the products described. We are only liable for product-related advice and information within the scope of duties of disclosure included in collateral contractual agreements unless expressly agreed otherwise. (09/19)

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We advance your casting

