



Press Release

GIFA 2019 International Foundry Trade Fair

Highlights: Press tour of the ASK Chemicals stand

Hilden, June 25, 2019 - During a press tour on 6/25/2019 at GIFA 2019, the Hilden-based company presented its latest solutions and innovations.

After the welcome by Jörg Brotzki, EMEA Executive Vice President and ASK Chemicals Executive Director, Dr. Jens Müller, Global Head of Research, Development and Innovation and Dr. Christian Appelt, Global Manager Inorganics, took journalists through the highlights on this year's ASK Chemicals stand.

Following the press tour, the company invited to expert talks in which, in addition to those already mentioned, Dr. Ingo Ederer, CEO of voxeljet and Antonio Cavotta CEO of xPurris participated.

Solutions for Additive Core Manufacturing Processes

Dr. Christian Appelt, an expert at ASK Chemicals for 3D printing fluids, first described the new requirements profile associated with additive manufacturing.

3D sand printing using the powder-binder jetting process eliminates the need to manufacture sand cores and shapes using contouring models and core tools. Instead, the geometry of the sand cores is initially developed digitally, based on CAD models. In the printing process, the layered application of quartz sand and the selective application of the binder fluid are carried out according to the specifications of the CAD model. Finally, the binder-free support sand is removed, and the printed component optionally conveyed to a post-curing process.

The compatibility and durability of the print-head components against the chemical components of the binder fluid, as well as the application and drop formation behavior of the fluid are critical to success. The physical and chemical properties of the binder fluid are crucial here, because in the case of selective binder application, the physical effects, among other things, must be understood and controlled in order to ensure a high degree of dimensional stability and a low finishing effort of the sand cores produced. In addition, 3D binders must meet high thermal stability requirements in order to withstand the stresses during the casting process.

The Hilden-based company will be presenting two new 3D binder systems at GIFA: NOVASET 3D, a phenolic resin binder for cold curing, reduces labor-intensive finishing and dramatically improves the efficiency of the process over standard furan-resin binders.

The inorganic INOTEC 3D system is suitable for hot-curing additive manufacturing processes. "As a productive inorganic binder system, INOTEC 3D is a byword for zero emissions during core production, core storage and when using the sand cores in the casting process," emphasized Dr. Christian Appelt as part of his guided tour. In addition, the product is also distinguished by a low finishing effort of the sand cores produced, which allows castings of high dimensional stability and surface quality due to their high thermal stability.

Environmental and Employee Protection in Focus

Protecting the environment and employees against emissions is one of the great challenges facing the foundry industry. ASK Chemicals recognized this at an early stage and has always striven to offer its customers products that help them to produce in an environmentally friendly manner without sacrificing efficiency and casting quality.

In his presentation, Dr. Jens Müller explained that ASK Chemicals always takes several routes to reduce emissions.

The company reduces the use of toxic or dangerous substances as far as possible or tries to substitute them with more environmentally friendly substances.



“In addition,” explained Dr. Müller, “we always try to improve the efficiency of our products, so that we can work with a lower resource or material usage. Another new focus of our R&D activity is the targeted reduction of emissions in foundry applications, which we have already successfully implemented for some of our new products. In particular, it involves the reduction of VOCs, BTX, phenol and formaldehyde.”

Dr. Müller discussed the ECOCURE BLUE, INOTEC and the the low-formaldehyde system (LFS) in particular during the press tour.

Inorganic binder systems represent the current optimum in environmental protection. The INOTEC process is completely emission-free and also offers the user convincing technological and economic advantages. At GIFA 2019, ASK Chemicals is presenting a solution for the application of the technology in iron casting.

ECOCURE BLUE, the world's first PU cold-box technology with a non-labeled part 1, is the most advanced and powerful cold-box system the market has to offer. The technology significantly reduces BTX, VOCs, phenol emissions to air and used sand, and is already being used successfully in many foundries across Europe.

German foundries have to reduce the formaldehyde emissions in the exhaust gas stream of their existing plants from 20 mg/m³ (mass concentration) to 5 mg/m³ by February 2020 at the latest. A package solution consisting of ECOCURE BLUE LFS binder, MIRATEC LFS coating and VEINO LFS additive enables users to meet the new limit values for formaldehyde emissions with pinpoint accuracy.

Xpuris: Innovative Exhaust Air Purification as an Effective Secondary Measure

Depending on the casting process, the use of secondary measures may be necessary to ensure a reduction in emissions. To date, however, solutions such as amine scrubbers and incineration systems have become increasingly limited, especially in view of stricter limit values. A patented air purification process from ASK Chemicals is based on a combination of catalytic oxidation and photo-oxidation.

The modular system can be supplemented with particle or odor filtration and thus protects operators from the effects of further legal tightening, for example with regard to the protection against “significant nuisances due to odor emissions” according to the German air pollution control regulation “TA Luft”. Sensor-supported measuring and control technology ensures that the exhaust air purification is as efficient as possible at all times and is always used only to the extent that is necessary for emissions.

Jörg Brotzki, Executive Vice President EMEA and Member of the Executive Board at ASK Chemicals, is confident, “At this year's GIFA, our solutions for environmental and occupational safety are major highlights.

I would particularly like to highlight our developments for 3D printing. The advanced equipment technology for additive manufacturing requires powerful and productive 3D printing fluids. And that's where ASK Chemicals comes in as a leading manufacturer of binders. We have pooled our know-how in casting technology and our chemical expertise, and in recent years we have developed systems in the field of both organic and inorganic printing fluids that can meet the high requirements of printing technology and casting processes.”

Visitors will be able to see the performance of inorganic printing fluids for themselves on a voxeljet VX1000-S IOB in live operation on the ASK Chemicals stand in Hall 12, Stand A22.

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Image material for the press release

About ASK Chemicals

ASK Chemicals is one of the world's largest suppliers of foundry chemicals and auxiliaries. Its comprehensive product and service portfolio ranges from binders, coatings, feeders, filters and release agents to metallurgical products such as inoculants, magnesium treatment wires, inoculation wires and master alloys for iron casting. Core production, prototype development and a wide array of simulation services complete the range.

With research and development locations in Europe, America and Asia, ASK Chemicals sees itself as a driving force behind foundry technology innovations coupled with the commitment to consistently provide added value to its customers. Flexibility and speed, quality and sustainability, as well as profitability of products and services are crucial for the company.

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