CHIMIA REPORT/COMPANY NEWS

Firmen stellen sich und ihre Produkte vor
Companies present themselves and their products

Interested in a contribution? Please contact
Swiss Chemical Society, info@scg.ch, +41 31 306 92 92

Trade Press Evonik Resource Efficiency

Due to increasing demand for lightweight construction materials for specialty applications, Evonik is expanding its production of ROHACELL® high-performance rigid, closed-cell foams at its Mobile, Alabama site in the United States. The production expansion is scheduled to be completed by the fourth quarter of 2020. With this investment, the specialty chemicals company will significantly increase production capacity for high-temperature resistant polymethacrylimide (PMI) foams in North America.

"The investment in Mobile strengthens our global position as a reliable partner and solutions provider of high-performance, lightweight PMI-based rigid foams and enables us to meet increasing demand in North America over the long term," says Christina Walkosak, head of the High Performance Polymers business line, Americas, for Evonik.

Lightweight construction material for specialty applications

The expansion of ROHACELL® production in Mobile includes construction of an additional production hall. Moreover, all shipping logistics will be com-bined in the new facility.

It was in 2008 that Evonik ventured across the Atlantic to start production of ROHACELL® high-temperature resistant polymethacrylimide foams in Mobile, Alabama.

"For many years now, we have been seeing consistently high global demand for our high-performance foams, particularly from the aerospace industry and the electronics market, and we are responding to the marketplace by expanding our production capacity accordingly," says Walkosak. Two years ago Evonik stepped up its ROHACELL® production in Germany by 20 percent. "Now we'll be significantly increasing our output in North America to be able to support our customers' growth appropriately."

Core material solution for composite structures

ROHACELL®, a rigid structural foam of polymethacrylimide, is used in the design and production of sandwich structures in aviation, cars, ships, sports goods, electronics, and medical technology. This extremely light foam withstands high temperatures and pressures, making it an ideal core material solution for composite structures. Such components can be produced quickly and efficiently, reducing production times and costs for the manufacturer. Additionally, the lightweight benefits of the product provide energy savings over the lifespan.

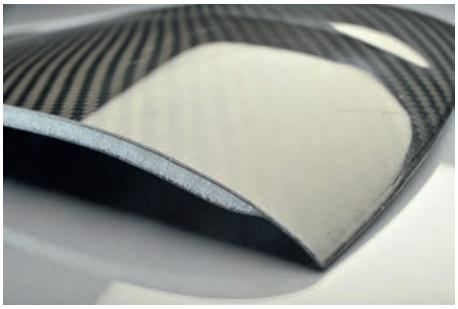

Image: ROHACELL® foam forms the core of lightweight sandwich structures with high shear strength and compressive strength, even at relatively high temperatures. (© Evonik)

corporate.evonik.com/en/media/press_releases/

Space Simulation – Leybold supplies the technology

Space missions and projects can only be successful if the materials and components used are first tested on Earth under space conditions. Leybold delivers the technology as an integrated supplier – up to the ultra-high vacuum.

Space missions are among mankind's most expensive research projects and can quickly cost several billion Euros. In order to ensure that the corresponding components also function in the vacuum conditions prevailing in space, they are technically simulated on Earth using suitable pumps and systems.

Vacuum specialist Leybold will present its product solutions for the development, manufacture and testing of spacecraft, satellites and space-related technologies at Space Tech Expo Europe, which will take place from 19 to 21 November in Bremen. Leybold offers a wide range of standardized and specific system solutions with integrated fore vacuum and high vacuum pumps – individually tailored to the respective requirements.

A major application is, for example, the simulation and testing of electrical space propulsion systems for spacecrafts. For this purpose, ionized gas particles are accelerated by an electric field. Modern ion engines generate a gas flow of 0.1 to 10 mg/s. In order to maintain a good high vacuum at this considerable flow rate in the test chambers, a very high suction capacity is required – often in the range of 10,000 to 100,000 l/s.

The experimental chamber systems required for this to produce the space conditions exist in all sizes: from a few liters for the testing of small objects such as printed circuit boards to several thou-sand cubic meters for proving the suita-bility of entire spaceships for space travel. The noble gas Xenon is the heaviest stable noble gas and is used in most cases for ion engines due to the high resulting thrust. However, the advantage of a large drive mass is a great challenge for vacuum pumps. One of the reasons is the poor thermal conductivity of Xenon gas, which leads to critical temperature increases in gas transfer vacuum pumps such as turbomolecular pumps. In addi-tion, many large turbomolecular pumps would be required to achieve the required high pumping speeds.

Leybold has developed an optimized and simple cryogenic solution for Xenon pumping. The strong single-stage cold heads of the Gifford-McMahon type carry metal discs that condense the Xenon gas with a pumping speed at the edge of the theoretical limit.

Since it is necessary to reach a final pressure in the range of 10-5 Pa – far below the process pressure – before oper-ating an ion engine, these applications also require a correspondingly powerful system of fore – and high-vacuum pumps in order to remove residual gases such as nitrogen, oxygen, etc. The pressure must be controlled by proper instruments throughout the testing process. Leybold provides all the necessary technology as well as technical consultancy, calculation, and design of the systems from a single source.

leybold.com/en/media/news