

SGL Group introduces new silicon carbide ceramics

- Newly developed solutions for use in industrial heat treatment applications
- 3D printed products made with carbon materials as supplement

Wiesbaden, September 12, 2016. SGL Group – The Carbon Company – is presenting at the moment two new silicon carbide materials, SIGRASIC® Performance and CARBOPRINT® Si, at various international trade shows. In industrial heat treatment applications, SIGRASIC® Performance is used for charging elements and systems.

The carbon fiber reinforced silicon carbide ceramic (C/SiC) SIGRASIC Performance is pending patent approval and is produced from the carbon fiber reinforced carbon (CFC) material SIGRABOND® Performance by means of a special infiltration process. With its high fiber content and low porosity, this material combines the benefits of ceramic with the favorable characteristics of carbon fiber material. The ceramic matrix hereby protects the carbon fiber from corrosive attacks without negatively influencing the excellent mechanical properties of carbon fiber reinforced carbon. With this new product, SGL Group is reacting to the rising demand for a material for charging systems that offers unchanged excellent properties when exposed to a gas flame up to 500 °C in heat treatment processes in pusher-through hardening furnaces with pre-oxidation.

CARBOPRINT Si is a development project of SGL Group making the most of the opportunities of additive manufacturing technologies for solutions made from carbon ceramic composites. Here the basic structure made of carbon is established in a 3D printing process. Complex component geometries, like optimum efficiency ventilators for heat treatment furnaces, can therefore be realized without machining. By infiltrating the printed component with silicon, a carbon reinforced silicon carbide ceramic is created, which offers a high ductility in combination with resistance against corrosive atmospheres and a high abrasion resistance.

“Innovative, high-grade specialty graphite solutions are essential for building high-performance, high temperature furnaces. Our products prove themselves with their outstanding thermal stability, high mechanical strength, as well as good thermal and electrical conductivity. With this newly developed silicon carbide ceramics solutions we are expanding our product range with efficient and highly reliable solutions”, explains Manfred Golling, Senior Application Manager for Industrial Applications at SGL Group.

The continuous adaption and improvement of SGL Group’s versatile customer-orientated specialty graphite solutions is part of the company’s path forward to foster megatrends like mobility, energy supply, and digitalization.

SGL Group – The Carbon Company

Corporate Communications

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We are looking forward to your visit at our stand at the following trade shows:

- Heat Treatment in Moscow/Russia from September, 13-15, stand K08
- World PM 2016 in Hamburg/Germany from October, 09-13, stand 204
- Heat Treatment Congress 2016 in Cologne/Germany from 26-28, stand E-071, hall 4.1

About SGL Group – The Carbon Company

SGL Group is one of the world's leading manufacturers of carbon-based products and materials. It has a comprehensive portfolio ranging from carbon and graphite products to carbon fibers and composites. SGL Group's core competencies are its expertise in high-temperature technology as well as its applications and engineering know-how gained over many years. These competencies enable the Company to make full use of its broad material base. SGL Group's carbon-based materials combine several unique properties such as very good electrical and thermal conductivity, heat and corrosion resistance as well as high mechanical strength combined with low weight. Due to industrialization in the growth regions of Asia and Latin America and increased substitution of traditional with innovative materials, there is a growing demand for SGL Group's high-performance materials and products. Products from SGL Group are used predominantly in the steel, aluminum, automotive and chemical industries as well as in the semiconductor, solar and LED sectors and in lithium-ion batteries. Carbon-based materials and products are also being used increasingly in the wind power, aerospace and defense industries.

With 40 production sites in Europe, North America and Asia as well as a service network covering more than 100 countries, SGL Group is a company with a global presence. In 2015, the Company's workforce of around 5,700 employees generated sales of €1,323 million. The Company's head office is located in Wiesbaden.

Further information on SGL Group can be found in SGL Group's newsroom at www.sglgroup.com/press or at www.sglgroup.com.

Important note:

This press release may contain forward-looking statements based on the information currently available to us and on our current projections and assumptions. By nature, forward-looking statements involve known and unknown risks and uncertainties, as a consequence of which actual developments and results can deviate significantly from these forward-looking statements. Forward-looking statements are not to be understood as guarantees. Rather, future developments and results depend on a number of factors; they entail various risks and unanticipated circumstances and are based on assumptions which may prove to be inaccurate. These risks and uncertainties include, for example, unforeseeable changes in political, economic, legal, and business conditions, particularly relating to our main customer industries, such as electric steel production, to the competitive environment, to interest rate and exchange rate fluctuations, to technological developments, and to other risks and unanticipated circumstances. Other risks that in our opinion may arise include price developments, unexpected developments connected with acquisitions and subsidiaries, and unforeseen risks associated with ongoing cost savings programs. SGL Group does not intend or assume any responsibility to revise or otherwise update these forward-looking statements.

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