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**Electric Heating Elements made from MoSi<sub>2</sub> for Industrial and Lab Furnaces up to 1,800°C**

**M.E.SCHUPP Launches Production of Molybdenum Disilicide Heating Elements in Germany**

Aachen (Germany), November 2007. At its Aachen based headquarters, M.E.SCHUPP Industriekeramik GmbH & Co. KG is launching the integrated (from dry powder to the completed heating element) production of electric heating elements from Molybdenum Disilicide (MoSi<sub>2</sub>) for thermic processing systems. Thus the provider of high-temperature key components for a range of 1,250°C to 1,900°C currently is the only company in Germany and the second one all over Europe to produce heating elements from this material. Under the brand name MolyCom<sup>®</sup>-Ultra and MolyCom<sup>®</sup>-Hyper they are used in industrial and lab furnaces with operating temperatures up to 1.800°C in the industrial fields Ceramics and Powder Metallurgy, Glass, Dental, Silicon Wafers/Semiconductors, Jewelry, Metallurgy and FDP (LCD).

At the production location Aachen M.E.SCHUPP provides a second source for MoSi<sub>2</sub> heating elements made in Europe. Being products „Made-in-Germany“ they stand for continuous high quality; constant electrical resistance, homogenous operating temperature, high temperature change consistency and a long life cycle are the quality criteria for electric heating elements. The production in compliance with the established industrial standards allows the use of new and old elements in parallel and the simultaneous use of MolyCom<sup>®</sup>-Ultra, MolyCom<sup>®</sup>-Hyper and heating elements by other manufacturers.

MolyCom<sup>®</sup>-Ultra is produced with a length starting from about 150 mm of up to more than two meters in all diameters from 3/6 mm to 12/24 mm. MolyCom<sup>®</sup>-Hyper with a diameter from 3/6 to 6/12 mm. The „Hot-Bending“ technology, only mastered by a few manufacturers worldwide,

allows for realization of customer specific, complex heating element geometries combined with high production efficiency.

The production in Aachen is launched based on company owned state-of-the art technology at an 800 m<sup>2</sup> production site (part of the total surface of 2,500 m<sup>2</sup>) on one of the worldwide most modern production lines. M.E.SCHUPP monitors and handles the quality with an own laboratory and external inspection partners. The investment amounts to 1.5 M. Euro. The production of high-purity heating elements made from Molybdenum Disilicide is scheduled for the near future. These special heating elements have already been successfully distributed in Europe since 2006 exclusively by M.E.SCHUPP.

With the launch of the MolyCom<sup>®</sup> production M.E.SCHUPP further strengthens its position as global special provider for high temperature technology from one source. Companies of the applying industrial fields such as Ceramics and Powder Metallurgy, Glass, Dental, Silicon Wafers/Semiconductors, Jewelry, Metallurgy and FDP (LCD) obtain essential components they require for electric heating, thermal isolation, temperature measuring, and engineering ceramic resources for thermic processes for sintering, melting and heat treatment. With a very attractive price/performance ratio of all products, a comprehensive and very personal service, technical and commercial know-how as well as reactive, flexible and efficient logistics including a fast delivery guarantee M.E.SCHUPP addresses both small and medium and major enterprises. Based on the product portfolio qualified staff from more than ten nations elaborate the appropriate optimal solution for the given customer requirements. M.E.SCHUPP operates within a international network of companies involved in the high temperature industry whose performances and products add to each other and supporting each other in development and marketing.

The M.E.SCHUPP brand MolyCom<sup>®</sup> includes electric heating elements to be used up to 1.800°C soon. They are composed from Molybdenum Disilicide and other material components. At more than 900°C a dense, thin fused silica layer builds-up at the heating conductor surface, preventing the MoSi<sub>2</sub> incandescent part from oxidation. MolyCom<sup>®</sup> is already established as technical equivalent but more economic alternative compared to the market leading heating element products based on MoSi<sub>2</sub>. The elements are available as MolyCom<sup>®</sup>-Ultra, meeting the industrial standards 1.700°C and 1.800°C and MolyCom<sup>®</sup>-Hyper 1.800°C, consisting of high-purity materials. For glass industry applications electric heating panels and tubes from aluminum oxide wool up to 1.600°C under the brand name MolyTec complete the portfolio. The

required connection material such as ceramic double-fasteners or aluminum straps with clamps from stainless material in order to install the MolyCom<sup>®</sup> elements in the furnace is also available.

Currently M.E.SCHUPP already achieves approx. 20% of its turnover with MolyCom<sup>®</sup> products, until 2010 the proportion is expected to rise to 35 % of a then targeted total turnover of 12 Mio..

With the MolyCom<sup>®</sup> production a part of high technology returns to Germany. For more than twelve years Molybdenum Disilicide heating elements have not been produced in Germany anymore. The former providers have been bought up by competitors who then moved the production away from Germany.

#### About M.E.SCHUPP

M.E.SCHUPP has been founded in 1996 by the entrepreneur Michael E. SCHUPP. Prior to founding the company he held positions with mayor and renowned companies involved in high temperature technology for decades. Today the company and its 26 employees from ten nations achieve a turnover of five million Euro. The enterprise is extremely solidly financed and profitable. Amongst the customers are applying industries in the field of Ceramics and Powder Metallurgy, Glass, Dental, Silicon Wafers, Semiconductors, Jewelry, Metallurgy and FDP (LCD) from all over the world.

The product portfolio consisting of the ranges heating, insulation, measuring, sintering and melting and high temperature adhesives is either manufactured by M.E.SCHUPP itself or by international cooperation partners, all of them part of the leading specialized manufacturers. Intensive cooperations are maintained by M.E.SCHUPP in particular with Japanese enterprises: A part of the products not produced by M.E SCHUPP itself are manufactured in Japan, partially further processed in Germany and exclusively distributed in Europe and other world regions. In its own production M.E.SCHUPP also benefits from the Japanese partner know-how as the qualities of Made in Germany and in Japan merge.