

## Press Information

### **Kyocera set to present its innovations - cordierite and many other fine ceramic components - at this year's Hannover Messe**

The leading Japanese ceramic manufacturer, which has consistently brought high-tech ceramics to the market, will demonstrate its expertise again at Hannover Messe 2019 which is taking place from April 1<sup>st</sup> to 5<sup>th</sup>.

**Kyoto/London, March 27<sup>th</sup>, 2019.** For the third time in a row, Kyocera is showcasing its advanced solutions in the field of fine ceramics at Hannover Messe, the world's leading trade fair for industrial technology. Following the successful appearances of the past two years, Kyocera is going to highlight cordierite this year, in addition to its broad range of products and technologies. Kyocera has been working on this innovative cordierite material since two decades and continues to develop it further.

Cordierite is distinguished by its low coefficient of thermal expansion (CTE) and versatility in machining it into highly complex parts. The weight of the designed components can be reduced by almost 70 percent when compared to that of conventional low CTE glass, as a slim and highly rigid ribbed structure can be made in cordierite – while still maintaining the high strength of the material. The properties of this extremely low expansion ceramic make it particularly suitable for components used in semiconductor process equipment and applications in the fields of space and astronomy. As an example, cordierite is used in the camera lens structures of telescopes used in astronomy due to its outstanding properties enabling minimal deformation due to temperature fluctuations.

#### **A comparison of material properties**

|                           | Unit                | Glass with low CTE | Cordierite Ceramic (CO720) |
|---------------------------|---------------------|--------------------|----------------------------|
| <b>Density</b>            | g / cm <sup>3</sup> | 2.53               | 2.55                       |
| <b>CTE</b>                | ppm / K             | 0.02               | 0.02                       |
| <b>Elasticity modulus</b> | GPa                 | 90                 | 145                        |
| <b>Specific rigidity</b>  | -                   | 36                 | 57                         |



## Fine ceramic components from eight industry categories

As one of the world's leading suppliers of fine ceramic components, Kyocera will also be presenting its other technical ceramic materials and components at Hannover Messe, which are applied in a total of eight industry categories: Bio- and environmental sciences, vacuum components, semiconductors, electronics, sapphire, information technology, mechanical engineering, and the automotive industry. Kyocera offers around 200 different formulations and compositions of ceramics such as aluminium oxide, aluminium nitride, cermet, forsterite, mullite, sapphire, silicon carbide, silicon nitride, yttrium oxide, and zirconium oxide. Kyocera's wide range of technologies in the field of process technology; from dry pressing technology, cold and hot isostatic pressing, injection moulding and foil casting to multi-layer components and metallization of ceramics, will also be on display in Hannover.

## Kyocera Booth Outline

|            |  |
|------------|--|
| Exhibition | Hannover Messe 2019<br><a href="http://www.hannovermesse.de/home">http://www.hannovermesse.de/home</a>   |
| Date       | Monday, April 1 – Friday, April 5, 2019  |
| Location   | Hannover Exhibition Grounds, Germany, Hall 3, Stand L01<br><a href="http://www.hannovermesse.de/exhibitor/kyocera-fineceramics/Y959297">http://www.hannovermesse.de/exhibitor/kyocera-fineceramics/Y959297</a> |



**For more information on Kyocera:** [www.kyocera.co.uk](http://www.kyocera.co.uk)

## About Kyocera

Headquartered in Kyoto, Japan, Kyocera Corporation is one of the world's leading manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the Kyocera Group, which is comprised of 264 subsidiaries (as of March 31, 2018), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the oldest producers of solar energy systems worldwide, with more than 40 years of experience in the industry.

The company is ranked #522 on Forbes magazine's 2017 "Global 2000" listing of the world's largest publicly traded companies. With a global workforce of over 75,000 employees, Kyocera posted net sales of approximately €12.04 billion in fiscal year 2017/2018. The products marketed by the company in Europe include printers, digital copying systems, microelectronic components, and fine ceramic products. The Kyocera Group has two independent companies in the United Kingdom: Kyocera Fineceramics Ltd. and Kyocera Document Solutions.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by Kyocera founder Dr. Kazuo Inamori — to individuals and groups worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (converted at approximately €764,000 per prize category).

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