

Denka Develops High Thermal Insulation Boards and Molded Materials Contributing to the Reduction of CO₂ Emissions



High Thermal Insulation Boards and Molded Materials

Denka Company Limited (headquarters: Chuo-ku, Tokyo; president: Manabu Yamamoto; hereinafter, “Denka”) has developed high thermal insulation boards and molded materials, which contribute to the reduction of CO₂ emissions. The company will begin trial sales of the high thermal insulation materials capable of withstanding a high-temperature environment for a long time in the first half of FY2021.

The solid and gas thermal conductivity of these products have successfully been reduced by applying fundamental inorganic material design technologies to DENKA ALCEN¹ to create an original high thermal insulation and cellular ceramics packaging material: CA₆ (calcium hexaaluminate). Its structure exhibits good thermal insulation performance especially in the 1,400 °C high-temperature range. Thanks to their good thermal insulation performance in high temperature, 1,000 °C or higher, environments, which was considered technically difficult to achieve in the past, a CO₂ emissions reduction bringing emissions down to approximately 60% of conventional thermal insulation products is expected.² In addition, the effective application of CA₆ is expected to improve the erosion resistance of iron oxides. Therefore, the products are positioned as products that contribute to the environment that can be expected to be used in the iron and steel industry.

Denka Value-Up, the new management plan adopted by the Group, identifies the high-value added infrastructure business as a priority field, alongside healthcare, the environment and energy. In the situation where the iron and steel industry and other industries are working toward the realization of carbon-neutrality in 2050, the company will continue to leverage our unique characteristics to develop products that contribute to the health of the environment, aiming to realize a sustainable society with the SDGs as its compass, and to be a company that is genuinely needed by society.

¹ DENKA ALCEN

Crystalline alumina short fibers mainly composed of alumina and silica. In addition to use as a fire-retardant energy absorber in industrial furnaces, to respond to strengthened regulations on the emission of particulate materials, nitrogen oxide, and other air pollutants from automobiles, the products are also used as retaining materials protecting catalytic converters and filters, which purify the exhaust gasses of automobiles and contribute to the mitigation of environmental impact.

² Example CO₂ emissions reduction calculation

The effect is assumed based on the thermal conductivity calculation model for when the ceiling of an iron/steel heating furnace is thermally insulated. Production speed and heat balance, etc. are not considered.

About Denka

Denka is a chemical manufacturer headquartered in Chuo-ku, Tokyo. The company specializes in developing business activities on a global scale across a wide range of fields, from inorganic and organic chemicals, to electronic materials and pharmaceuticals. Founded in 1915, Denka has steadily continued to develop and manufacture products that contribute to the development of society by fully utilizing its unique concepts and technological capabilities. Upholding its corporate slogan, “Possibility of chemistry,” the company and its president, Manabu Yamamoto, are committed to contributing to the sound development of the society while sincerely tackling the challenges that the society is now confronting

<p>[For Inquiries about This Press Release from Media] Corporate Communications Dept. Tel : +81-3-5290-5511</p>
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