NIPPON CHEMICAL INDUSTRIAL

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Development of solid sorbents for carbon dioxide capture, utilization, and storage (CCUS)

We at Nippon Chemical Industrial Co., Ltd., hereby announce that we have developed solid sorbents for carbon dioxide capture, utilization, and storage (CCUS) with a view to expanding the field for reducing carbon dioxide.

◆ Background behind the development of this technology

At this time, we are working on business expansion and strengthening the business structure, promotion of globalization, and new value creation consistent with the policy set forth in our medium-term management plan of “Promotion of the Growth Strategy and New Value Creation.” In this context, we have been exploring compounds and peripheral technologies with the expectation that capture technology for absorbing and desorbing carbon dioxide, a factor behind global warming and an issue attracting worldwide attention, will expand. As part of this process, we harnessed more than three decades’ worth of technology for the synthesis of phosphine derivatives to successfully develop a compound that can absorb and desorb carbon dioxide.

The product we developed is available as a solid type for which a compound that absorbs and desorbs carbon dioxide has been immobilized by affixing it to spherical silica gel. This technology will make the efficient capture of carbon dioxide possible.

Amid the expected expansion of carbon dioxide-reduction technology stemming from global warming, we have begun manufacturing this product using actual equipment at the Fukushima No. 2 Factory (Tamura-gun, Fukushima) and upgraded our product supply system in order to have this product evaluated by numerous concerned parties.

We will continue to contribute to technology for the reduction of carbon dioxide through efforts to develop this product and promote the cultivation of environmentally friendly markets with the aim of realizing a sustainable society.

◆ Appearance and property

Substrate	Spherical silica gel
Absorption temp.	-20℃～r.t.
Desorption temp.	70～120℃
Absorption volume	1.3～2.3 mol/kg
Mechanism for CO_2 absorption	Chemical absorption