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News Release

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SEKISUI KASEI CO., LTD. (Head Office: 2-4-4 Nishi-tenma, Kita-ku, Osaka; President: Yasunobu Furubayashi) has newly developed nanosized crosslinked polymer particles that enable precise control of refractive index while maintaining transparency, for high-performance films and their intermediate materials.

Development of New Crosslinked Nanoparticles

– Enabling Refractive Index Control While Maintaining Transparency –

1. Development History

In recent years, in fields such as optical display films and optical communication components, requirements such as higher transparency, precise control of optical properties, and thinner films have been increasing. As a result, there is a growing demand for functional fine particles that can meet customers' needs to "adjust to a desired refractive index while maintaining transparency."

TECHPOLYMER, SEKISUI KASEI's polymer fine particle series, has been widely adopted in a broad range of applications, offering functional particles from micron to sub-micron sizes based on our proprietary polymerization and particle design technology.

To meet the requirements for high-transparency materials, The Company has developed crosslinked nanoparticles that provide a wide controllable range of refractive index and are applicable to various coating dispersion media.

2. Features

Compared with hollow particles or inorganic silica fine particles, crosslinked nanoparticles have a wider controllable range of refractive index, thereby enabling the turning of optical properties without impairing the transparency of various materials.

■ High Transparency and Refractive Index Controllability

Due to their small particle size, high transparency can be maintained while the refractive index can be freely adjusted through compositional design.

Particle Size	50-80nm
Refractive Index	1.495-1.595

■ High Dispersion Stability

By utilizing advanced dispersion control technology, excellent dispersion stability is achieved not only in aqueous systems but also in various organic solvents.

Dispersing Media	Water, PGME, etc.

■ Expansion into Advanced Materials Fields

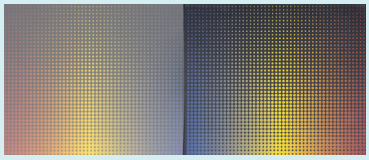
By imparting transparency, suppression of optical loss—an issue required for optical communication materials and similar applications—is expected.

The newly developed product can maintain transparency even at high loading levels.

Appearance comparison of dispersions (solid content 20%)

Conventional product (particle size: 500 nm) | **Newly developed product (particle size: 50 nm)**

Transparency comparison of acrylic films containing 40 wt% fine particles



Film containing conventional product + background image (particle size: 500 nm) | **Film containing newly developed product + background image (particle size: 50 nm)**

3. Future Outlook

Intended applications include displays and optical communications.

This product was exhibited at the New Functional Materials Exhibition, held at TOKYO BIG SIGHT from January 28 (Wed) to 30 (Fri), 2026.

The Company aim to expand its business in the high-transparency materials field through the market introduction of this product, while further enhancing the functionality of fine particles in pursuit of applications in advanced materials fields, where the creation of added value is required.

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