ZEON Corporation Completes New Specialty Chemical Synthesis Plant in Yonezawa City

May 21, 2004

On May 20, 2004, ZEON Corporation (Chiyoda-ku, Tokyo; President & CEO: Naozumi Furukawa) cerebrated the completion of a new specialty chemical synthesis pilot plant at ZEON Chemicals Yonezawa Co., Ltd. (Yonezawa City, Yamagata; President: Shigemitsu Kamiya).
The multi-purpose pilot plant was constructed to manufacture specialty synthetic aroma chemicals and develop and manufacture such new products as optically active intermediates using a new optical resolution agent, representing the next leap forward for our Specialty Chemicals Business.

ZEON's Specialty Chemicals Business comprises synthetic aroma chemicals, industrial chemicals, and intermediates for medicines and agricultural chemicals, all of which are developed with our unique C5 raw materials and based on our proprietary synthesis technology. They play an important role in terms of our comprehensive use of C5 raw materials, the exclusive domain of ZEON worldwide. The new pilot plant will strengthen this business by developing new products, whilst the new plant of cyclopentanone, which was constructed earlier in this year at our Mizushima Plant will boost the existing businesses.
Synthesis facilities for synthetic aroma chemicals are already in operation at ZEON Chemicals Yonezawa, as well as at the Mizushima Plant, ZEON's main plant for manufacturing synthetic aroma chemicals. However, the newly constructed plant will manufacture specialty products to meet increased demand both in Japan and overseas. In addition, a new optically active intermediates will be manufactured at the pilot plant using an innovative optical resolution technology developed in a joint study with Tokushima University. Demand for optically active substances, whose superior properties are valued in the fields of medicine, aroma chemicals and materials for information technologies, has increased and is expected to see significant growth. The research and development of this optical resolution agent was adopted as a project under the sponsorship of the New Energy and Industrial Technology Development Organization (NEDO).

Supplementary Explanation of Optical Resolution

A pair of compounds with a mirror image relationship and that cannot be combined are called optically active substances. Pairs of optically active substances often exhibit different individual effects, both in terms of human perceptive functions such as the sense of smell, and pharmaceutical efficacy. For example, 1-Octen-3-ol, a major

flavor component of Tricholoma matsutake mushrooms, consists of a pair of optically active substances: one with the pleasing scent of Tricholoma matsutake, the other producing an undesirable musty aroma. Likewise, thalidomide is a medicine with an excellent sedative effect on the one hand, but at the same time it is harmful to the human body. Therefore, to isolate only the appealing aromatic property of Tricholoma matsutake or the sedative effect of thalidomide, it is necessary to obtain only one of the optically active substances. However, optically active substances exhibit similar physical and chemical properties and are therefore extremely difficult to separate using conventional methods. The technology to obtain only the desired optically active substance from these pairs is called optical resolution and the chemical compound used for optical resolution is called a optical resolution agent.

For further information

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