



TECHNOLOGY

Olefin Polymerization Catalysts with High Activity for the Polymerization of alpha-Olefins and in a Living and Stereoselective Manner

OVERVIEW

Ziegler-Natta polymerization of alpha-olefins by an ultimate catalyst (i.e. a single catalyst) that carries out polymerization of alpha olefins with high activities, and that can prepare polymers in an isotactic manner and produce living polymers with high molecular weights and narrow polydispersities, has not been found.

Researchers at the University of Maryland, College Park, now believe they may have found an ultimate catalyst system. Thus the present invention involves the use of an early transition metal class of catalysts of the metallocene type and a co-catalyst. The researchers emphasize that this is the first catalyst system for the living and stereospecific polymerization of an alpha-olefin. This system may polymerize higher alpha-olefins, such as 1-hexene but has also been used to polymerize lower molecular weight olefins.

The near unit polydispersities as well as high activities, comparable to those of commercial Ziegler-Natta catalysts, render this system unique indeed.

The inventors have also reported polymerization of vinylcyclohexane to produce poly(cyclohexylethylene) using the system. Poly(cyclohexylethylene) has been noted as a suitable polymer for the DVD industry.

For more information please contact the University of Maryland, Office of Technology Commercialization (301) 405-3947; e-mail otc@umd.edu.

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Additional Information

INSTITUTION

University of Maryland, College Park

PATENT STATUS

Patent(s) pending

LICENSE STATUS

Contact OTL for licensing information

CATEGORIES

- Chemical

EXTERNAL RESOURCES

- [US Patent 6,579,998](#)

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