

Mitsui Chemical PE and PP TECHNOLOGY

Mitsui was one of the first companies in the world to start commercial production of HDPE. Making full use of its wide-ranging expertise Mitsui provides licensees with a process design specially tailored to meet the specific conditions of each site. The following are Mitsui Chemicals' proprietary technologies PE and PP available for licensing:

- **HDPE (CX Process)**

The most important property of HDPE is its mechanical strength with easy processing capability, and this can be realized through bi-modal high molecular weight (HMW) HDPE. The CX Process, a slurry phase polymerization employing a super-high-activity catalyst and a two-reactor system, is the best way of manufacturing such bimodal HMW HDPE. Molecular weight distribution (MWD) can be controlled freely by simply adjusting reactor operating parameters. The low molecular weight component produced in one reactor gives excellent mechanical strength. In addition, composition distribution (CD) is obtained through a short chain branch and can be controlled freely by adjusting the incorporation of comonomer to each component. Such CD provides resin with further mechanical strength. The CX Process thus ensures the best quality for major HMW HDPE application.

- **m-LLDPE (Evolue Process)**

It is a Bimodal gas phase process utilizing Mitsui's proprietary Metallocene Catalyst to produce LLDPE having easy processing and excellent mechanical and optical properties.

- **PP Technology**

It is a Sophisticated hybrid (Bulk Loop/Gas) process with Mitsui's proprietary high yield, high stereo-specificity catalyst (HY-HS Catalyst) to produce excellent polypropylene homopolymer and random/impact copolymers. Simplified process using "Loop Reactor" and Mitsui's proprietary "Gas Phase Reactor" minimize investment. Unique design of the Mitsui Gas Phase Reactor ensures stable, long-term operation without fouling or frequent shutdowns for cleaning. Proprietary particle classifier in homopolymerization reactor system ensures stable operation and high product quality.