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SOLTEX POLYBUTENE MANUFACTURING PROCESSES

Polybutenes are made by the cationic polymerization of butylene containing streams (mixed C4 feedstock). The mixed C4 feedstock can come from a variety of sources including various refinery streams and FCC cracker streams. These streams contain isobutylene and some butene-1 and butene-2 co-monomers which are incorporated to some degree in the polymer chain.

The C4 feed streams are treated and purified to remove sulfur and other undesirable components prior to the polymerization process.

The purified mixed C4 feedstock is then fed, usually on a continuous basis, to a suitable reactor and mixed with a Lewis acid catalyst system under conditions of pressure and temperature to produce the desired polymer grade(s). Following the polymerization the crude reaction mixture exits the reactor and is subjected to series of wash steps to remove the catalyst and catalyst residues. The reaction mixture is further processed to remove the unreacted butylenes leaving a mixture of light and heavier polymer products. Polymerization yields (conversion of the butylenes) depend on molecular weight and are generally lower for the higher molecular weight products.

No solvents are used in any of the processing steps.

The polymer mixture is then distilled to produce a light and a heavier polymer stream. The light polymers are further processed to give PB 4 and PB 6 products.

The heavy polymer product stream is cooled to an appropriate temperature for storage or shipping. The heavier product stream can range from PB 8 to PB 128 depending on the polymerization conditions.

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