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Process for preparing polyether ketones

Description of Technology: The present invention concerns a process for preparing polyether ketone polymers by the catalyzed coupling of bishaloarylketones, with alkali metal carbonates serving as the source of ether oxygen. Polyether ketone polymers are useful in composite and fiber applications.

Patent Listing:

1. US Patent No. 5,523,384**,** Issued on June 4, 1996, "Process for preparing polyether ketones." http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=5,523,384.PN.&OS=PN/5,523,384&RS=PN/5,523,384

Market Potential: Recent entries into the field of high performance resins and fibers include polyphenylene sulfides, polyetherimides, aromatic polyether-ether ketones (PEEK) and aromatic polyether-ketone-ketones (PEKK). This invention concerns a process for preparing aromatic polyether-ketone-ketones (PEKK). PEKK polymers are currently being made via a two step AlCl.sub.3 based Friedel-Craft reaction. Such a process requires virtually stoichiometric quantities of AlCl.sub.3 in both steps and also a recrystallization of the material to arrive at the desired isomer. The removal of excess AlCl.sub.3 by an extraction and a purification step requires the use of large, usually expensive, corrosion resistant vessels and drying equipment.

The present invention provides an improvement over the above Friedel-Craft system as it is a one step method and does not require an extensive extraction procedure.

The products formed by the process described herein are as used as films, coatings, fibers, composite matrices, adhesives and foams in industrial and aerospace applications that require flame resistance, high heat distortion temperatures and solvent and chemical resistance.

Benefits:

- One step method for preparing polyether ketones.

Applications:

- Films
- Coatings
- Fibers
- Composite matrices
- Adhesives
- Foams in industrial and aerospace applications

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