



CATI

Center for Advanced Technology and Innovation

High Performance Polyester Sulfone Oligomer

Oligomer Overview: High performance engineering plastics are being used to lower weight, speed production, and enhance the performance of many products. The present technology affords improvements to sulfone based compositions that can be substituted for metal or epoxy compositions. When incorporated into sulfone systems, these oligomers offer increased strength, durability, and temperature/solvent resistance.

Patent:

1. **US Patent No. 6,583,255**, Issued 06/24/03, “Method and Formulation for Making the High Performance Polyester Sulfone Oligomer”

Technology Benefits: This patent, developed by The Boeing Company, is specifically for a high performance thermoplastic polyester sulfone oligomer which has greater strength, impact resistance, toughness, solvent resistance, and temperature stability than prior composites of the similar type. This technology would be an excellent candidate to replace epoxy based composites which are brittle and more readily degraded by heat. The compositions using this technology are also able to retain structural integrity at much greater temperatures than conventional polyimides. Conventional polyimides currently can withstand temperatures of up to 625 degrees Fahrenheit while this technology can retain its properties up to 950 degrees Fahrenheit.

Possible Applications for the Oligomer:

Possible areas to look into for applying this technology include but are not limited to the following areas:

- Automotive – replacing die-cast, stamped or machined elements with lighter weight components
 - Firewalls

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- Bumpers
- Hoods and trunks
- Gas tanks
- Rear window for convertible top
- Dash boards and other interior components
- Interior and exterior coatings
- Intake manifold
- Engine covers
- Valve covers
- Boat hulls
- Audio speaker cones
- Medical/biological/pharmaceutical applications
 - Prosthetics
 - Surgical instruments/tools
- Thermal management devices
- Rugged outdoor equipment
- Aerospace/military/defense applications

Current Market Information: The plastics industry is one of the largest manufacturing industries in the United States accounting for more than \$310 billion dollars in annual shipments. The industry directly employs more than 1.4 million people. Plastics play an indispensable role in a wide variety of markets, ranging from packaging and building/construction to transportation; consumer and institutional products; furniture and furnishings; electrical/electronic components; adhesives, inks, coatings and others.

Licensing Opportunity: The Center for Advanced Technology and Innovation (CATI) is a technology transfer and commercialization center located in Southeast Wisconsin. CATI has acquired the above technology from The Boeing Company and is making it available for review and licensing.

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