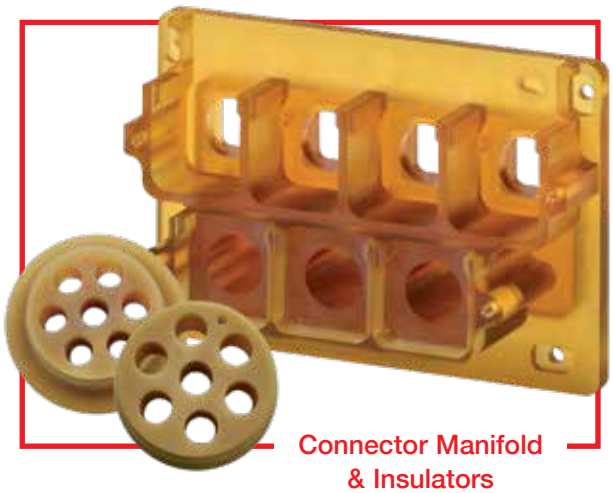
MITSUBISHI CHEMICAL ADVANCED MATERIALS

Aerospace

Duratron® U1000 PEI & U2300 PEI

Aircraft Electrical Interconnector Applications



Connector Manifold & Insulators

Challenge

Reliable, more versatile and light weight material for electrical system components

In aircrafts a vast array of different electrical connectors is used for the system requirements. The metal contacts require insulation from each other and their housings. The housings are traditionally made of metal.

By using an advanced thermoplastic with constant di-electric properties and high electrical strength, the distance between contact pins can be reduced. By further use of a thermoplastic for the housing more weight can be reduced. These housings can be coated for EMC/RF protection.

Key Requirements

- High electrical strength
- No dielectric breakdown over sustained periods
- Over moldable
- Can be copper/nickel plated
- Low co-efficient of thermal expansion
- Dimensionally stable stock shapes for precision machining
- Continuous service temperature >150 °C (302 °F)
- UL94 – V0 rating (minimum)

Customer Benefits

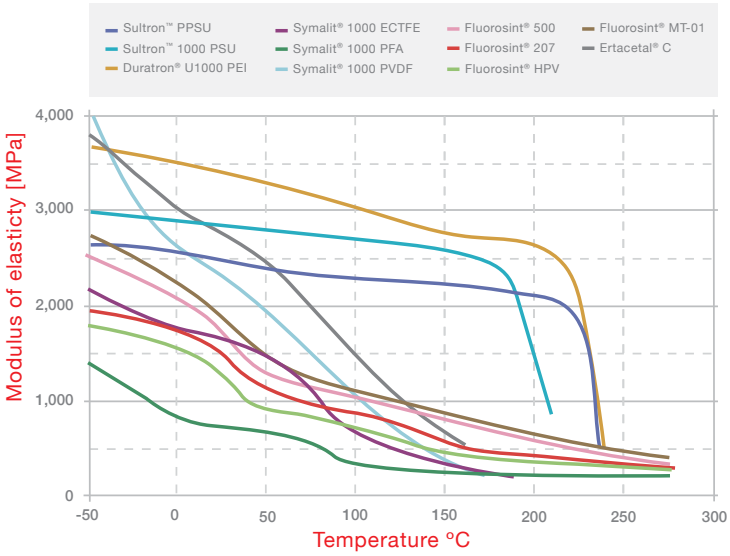
- As a result of working with us the customer has benefited from reduced component failure occurring in the past due to either dimensional instability or poor coating of housings
- Lighter weight components
- Clean stock shapes or components aid superior coating
- Full traceability as a standard service supports safety & efficiency efforts
- We provide testing capabilities and certification where required

Why Duratron® U1000 PEI & U2300 PEI?

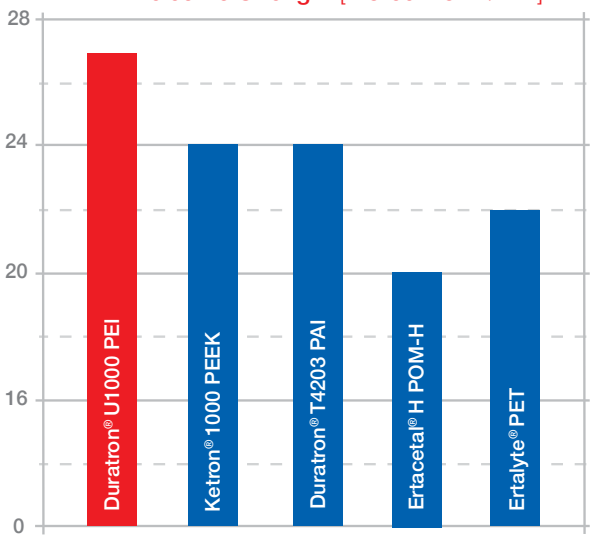
Mitsubishi Chemical Advanced Materials manufactures Duratron® U1000 PEI & Duratron® U2300 PEI stock shapes suitable for machining. These amorphous materials are easier to over mould, coat or bond than semi-crystalline materials such as PEEK, without sacrificing continuous service temperature properties and with improved electrical strength.

- Excellent dimensional stability over temperature range minus 40 °C to 170 °C.
- Excellent stability and machining properties reduce machining cost
- High dielectric strength 30.3 kV/mm
- Chemical resistance to suit aerospace applications

Stiffness vs Temp [derived from DMA-curves]



Dielectric Strength [IEC 60243 kV/mm]



Mitsubishi Chemical Advanced Materials Added Value

- Our material processing and machining facilities are accredited to AS9100 rev D management system
- Our experience and quality in manufacturing engineering polymer shapes in combination with highly developed machining capabilities
- We use knowledge, experience and test capability, built up over five decades, to ensure that the extruded stock shape is consistent both in its mechanical properties and dimensional stability
- We utilize our manufacturing excellence to produce uncontaminated materials

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