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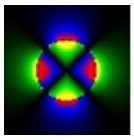
Magnet Division Specification

Specification Number: SMD-APUL-2006

Revision: A



Superconducting
Magnet Division

Procurement Specification, Ultem 6200 Tubes for Coil End Part Fabrication

- Prepared by: Signature on File
  J. Schmalzle
- Cognizant Engineer /Scientist: Signature on File
  J. Schmalzle
- Production Section Head: Signature on File
  M. Anerella
- Q .A. Approval: Signature on File
  E. Perez
- ES&H Review: Signature on File
  S.H. Moss

Revision History

- Rev A:

1. Scope:

This specification establishes the material requirements and quality assurance requirements for molded Ultem 6200 tubes to be used to fabricate coil end parts. These items are made of an amorphous thermoplastic copolymer with glass fiber reinforcement.

2. Applicable Documents:

2.1 Specifications:

The following documents form a part of this specification to the extent specified herein. Unless otherwise specified, the issue date or revision level shall be that in effect on the date of the invitation to quote:

ASTM D149	Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
ASTM D256	Impact Resistance of Plastics and Electrical Insulating Materials
ASTM D638	Tensile Properties of Plastics
ASTM D648	Deflection Temperature of Plastics Under Flexural Load
ASTM D695	Compressive Properties of Rigid Plastics
ASTM D790	Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
BNL-QA-101	BNL Seller Quality Assurance Requirements

3. Requirements:

3.1 Material:

The following molding material shall be used to fabricate the tubes:

Resin identification:	ULTEM® 6200
Manufacturer/Supplier:	Sabic Innovative Plastics
	(800) 752-7842

Molded tubes shall be free of voids.

This resin is based on a polyetherimide copolymer containing 20% fiberglass reinforcement. The molded products from this material offer high temperature resistance and enhanced chemical resistance to partially halogenated solvents.

3.2 Testing, Analysis, and Certification of the Molding Material:

| 3.2.1 A Certificate of Chemical and Physical Analysis shall be obtained from Sabic Innovative Plastics, for each production lot (batch) of molding material ordered. This report shall be based on a series of lab tests performed on samples molded from each lot of material. The analysis must include the following measurements which must be within the values listed:

Property (as molded)	Test Method	Value
Izod Impact, notched, .125 in. 23^0C	ASTM D256	1.0 ft.lb/in. minimum
Flexural Strength	ASTM D790	28 kpsi minimum
Flexural Modulus	ASTM D790	.90 x 10^6 psi minimum
Tensile Strength, yield Type 1	ASTM D638	20,500 psi minimum
Heat Distortion Temp at 264 psi	ASTM D648	215 - 230^0C

3.2.2 A copy of the Certificate of Chemical and Physical Analysis shall be provided with each shipment to Brookhaven National Laboratory.

3.2.3 Lab tests shall be performed on samples molded from each lot of material and a report shall be generated indicating the results. The analysis must include the following measurements which must be within the values listed:

Property (as molded)	Test Method	Value
Compressive Strength	ASTM D695	22,500 psi minimum
Dielectric Strength 60 Hz ST/SS (wet)	ASTM D149	520 volts/mil minimum

3.2.4 A copy of the test report shall be provided with each shipment to Brookhaven National Laboratory.

3.3 Process Uniformity:

Since uniformity of the mechanical and electrical characteristics of the parts specified herein is fundamentally important, there shall be no change in manufacturing methods during the entire production run without prior written approval from the Buyer.

4. Quality Assurance Provisions:

The quality assurance provisions of this procedure require compliance with the specification requirements outlined above.