Fluon+ mPLASTICS

Fluon+ mPEEK - 1100 Series Product Information

Description

Fluon+ mPEEK are a series of PEEK products which have been modified using AGC's proprietary fluoropolymer and compounding technology. The fluoropolymer modification improves the impact and wear resistance of the PEEK resin, as well as improving the physical and electrical properties.

Fluon+ mPEEK can be processed via conventional PEEK molding methods, such as extrusion or injection molding. Potential applications may be hose or tube, wire and cable, gears, sealing, or other markets where high temperature and chemical resistance are required

Material Features

- Impact resistance
- Wear resistance
- Flexibility
- Electrical performance
- Dimensional stability
- Chemical resistance

Applications

- **Extruded moldings**
  - Film for electrical insulation
  - Wire and cable
  - Tube
- **Injection moldings**
  - Gear member
  - Bearing retainer
  - Casing
  - Case body
- **Gaskets Cutting and processing**
  - Plate / Sheet
  - Round / Cylindrical bar

Processing

Fluon+ mPEEK can be processed via conventional PEEK molding techniques

- Extrusion molding
- Injection molding
- Pressure molding

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Fluon+ mPEEK Typical Properties

Property	Test Method	Units	PEEK-5 (unannealed)	Modified PEEK Increasing Modifcation -->	
				KB-1120	KB-1130
Tensile Strength (23 °C)	ASTM D638	MPa	85	81	61
Tensile Strength (200 °C)	ASTM D638	MPa	43	41	25
Tensile Elongation (23 °C)	ASTM D638	%	98	170	62
Tensile Elongation (200 °C)	ASTM D638	%	266	287	298
Flexural Strength (23 °C, 5% strain)	ASTM D790	MPa	136	107	82
Flexural Modulus (23 °C)	ASTM D790	GPa	3.6	2.9	2.4
Impact Strength (23 °C)	ASTM D256	J/m	78	335	NB
Impact Strength (-40 °C)	ASTM D256	J/m	57	62	61
Melt Flow Rate (372 °C / 5kg)	ASTM D2207	g/10 min	14.5	15	15
Heat Deflection Temperature	JIS F07191	Deg C	145	145	145

Chemical Resistance

Modified PEEK shows similar or better chemical resistance to PEEK

Fluid	Immersion Condition	Tensile Strength Retention (%)			Elongation Retention (%)		
		PEEK	KB-1120	KB-1130	PEEK	KB-1120	KB-1130
IRM-903	150 °C 3 Weeks	88	96	104	32	76	54
Diesel No. 2	150 °C 3 Weeks	92	101	106	21	33	94
Steam	260 °C 3 Weeks	97	106	112	36	54	108

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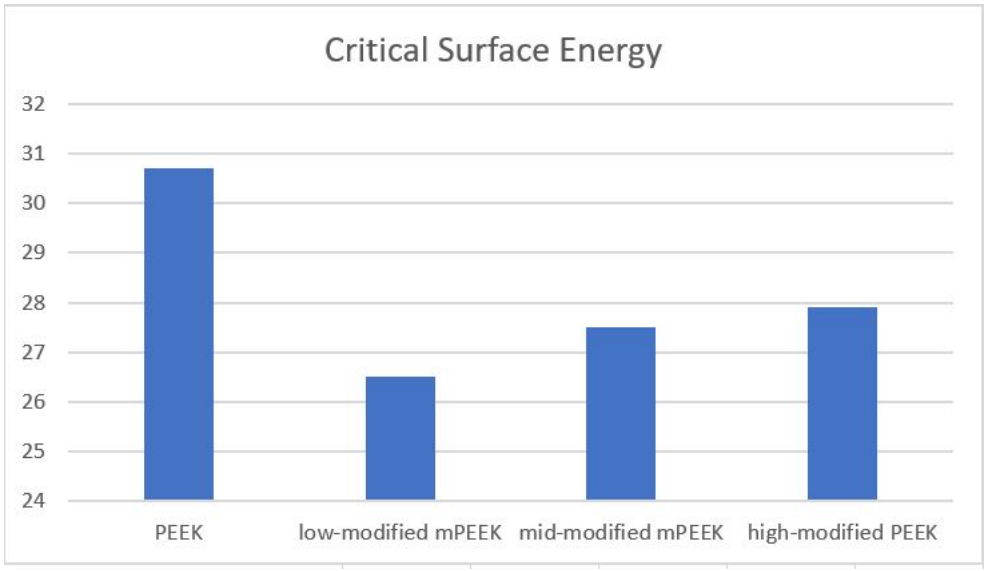
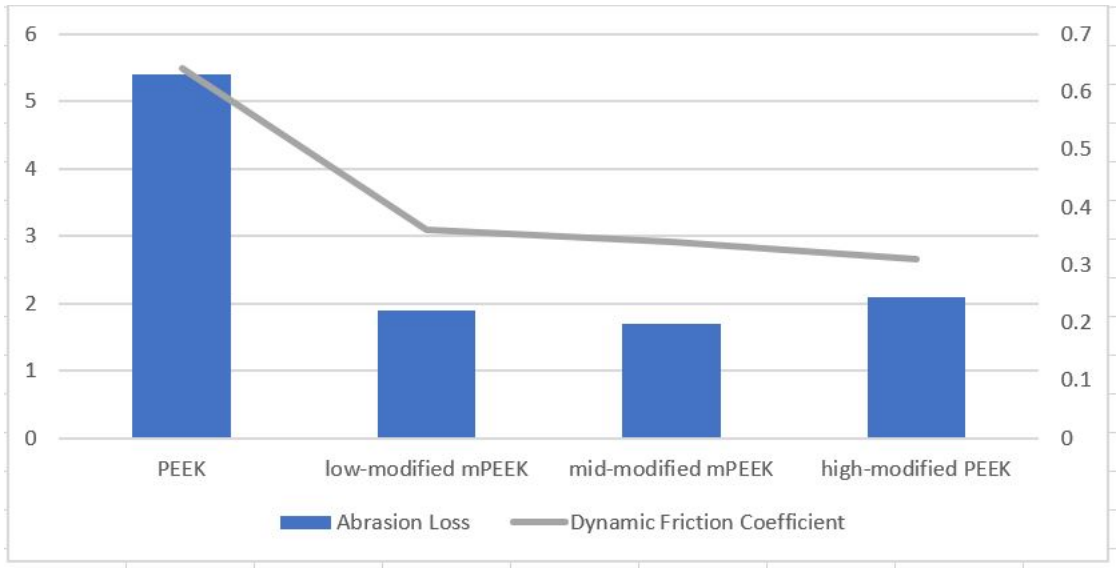
Wear Property Data

Loss of material during abrasion testing significantly reduced with the addition of fluoropolymer modification





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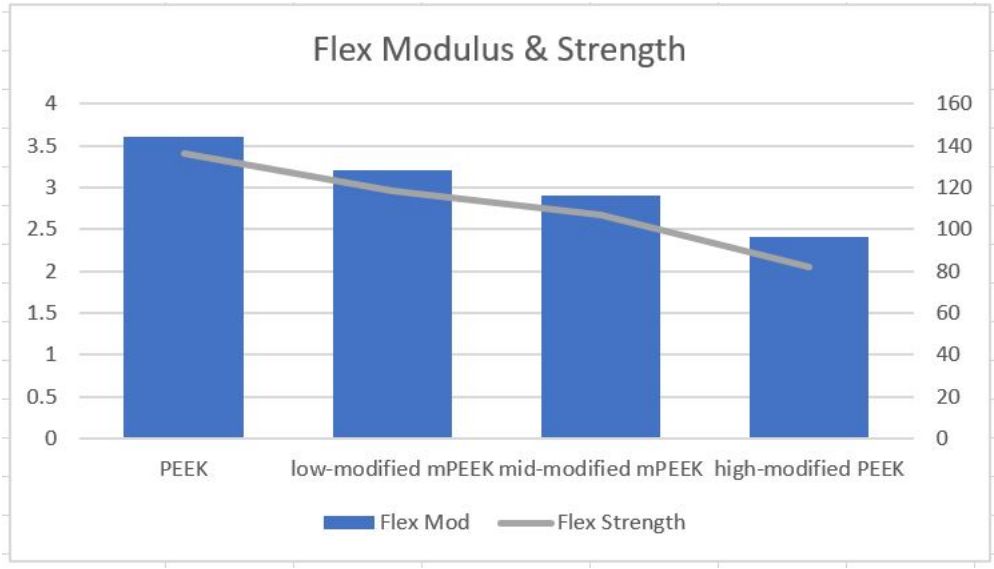
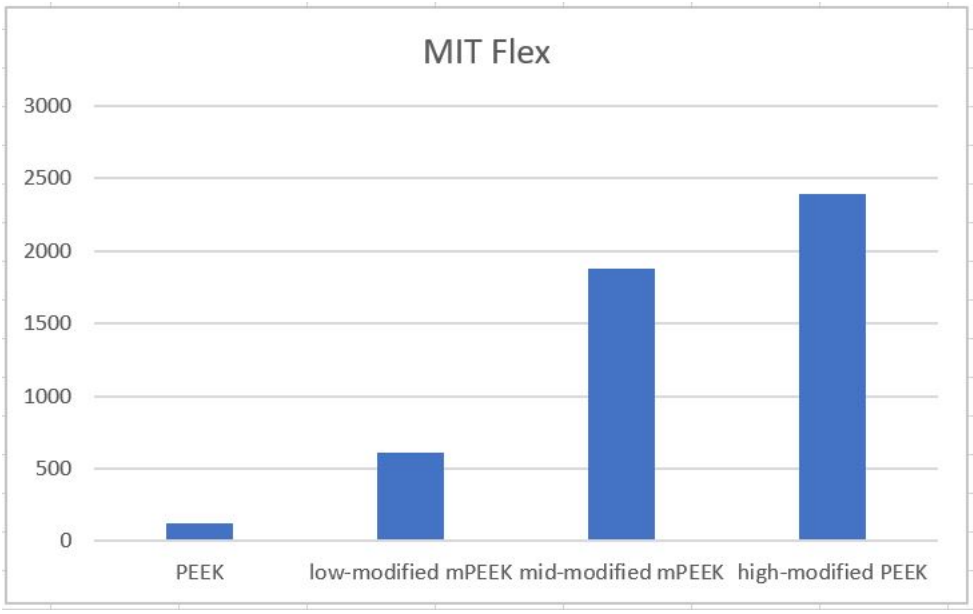
Flexural Property Data

Flex resistance via MIT increased with fluoropolymer modification





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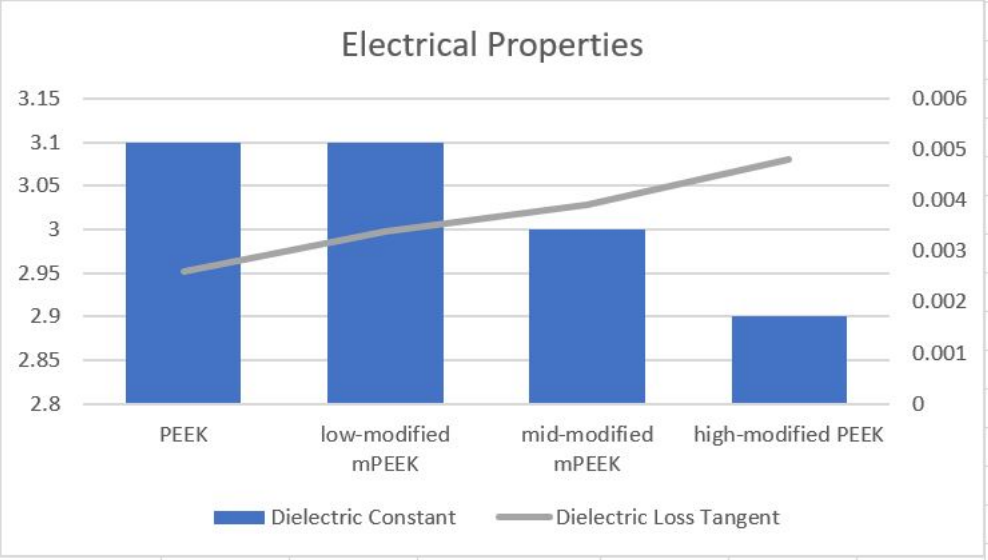
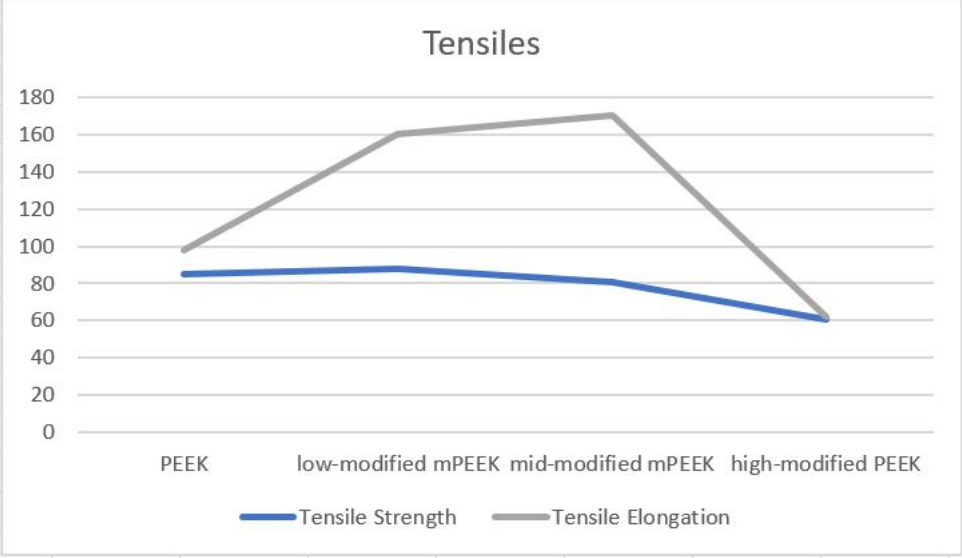
Electrical Properties



Tensile Properties



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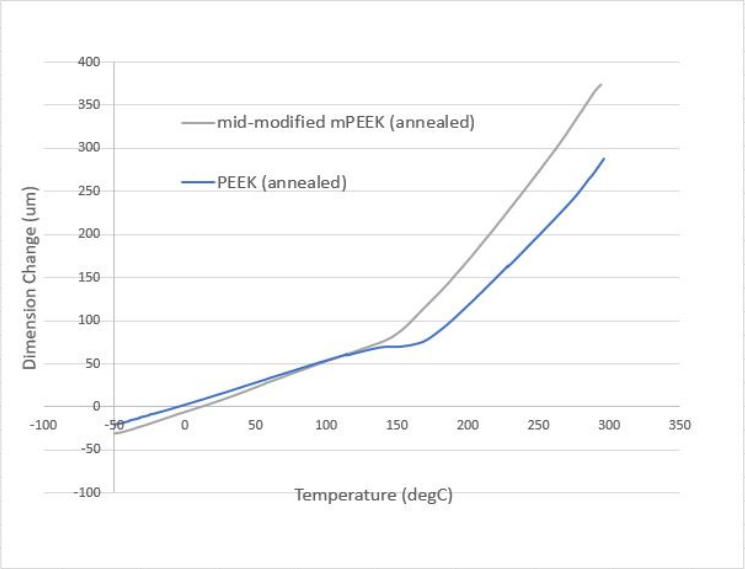
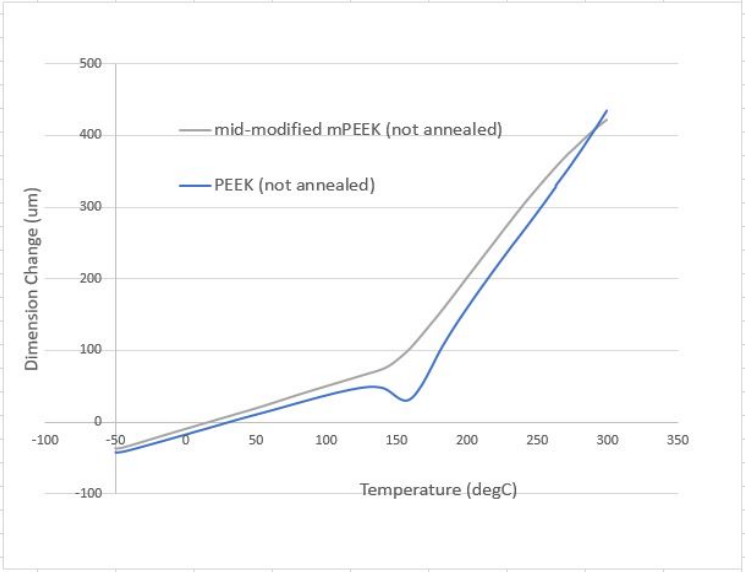
Coefficient of Thermal Expansion

Dimensional stability across the operatig temperature improved with fluoropolymer modification





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Handling and Storage

Heating Fluon® products in excess of 750°F (399°C) can produce toxic fumes. It is, therefore, necessary to provide local exhaust ventilation in areas where Fluon® products are exposed to high temperatures. Avoid breathing fumes or contaminating smoking tobacco with fumes, powder, or dust.

Thermal decomposition of this product will generate hydrogen fluoride, which is corrosive. Corrosion resistance materials are required for prolonged contact with molten resin.

Fluon+ mPLASTICS products should be stored in their original containers. This will be either in re-sealable plastic pails, or in drums with the liner bags and chime rings securely re-fastened.

Products should be stored indoors at nominal conditions of 23 C and 50% relative humidity. Products should be dried prior to use.

Safe Handling Information

A summary of the hazards, as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200 for this product are:

Physical hazards: None

Health hazards: None

FOR ADDITIONAL INFORMATION AND HANDLING INSTRUCTIONS READ AGC CHEMICALS AMERICAS, INC. MATERIAL SAFETY DATA SHEET.

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