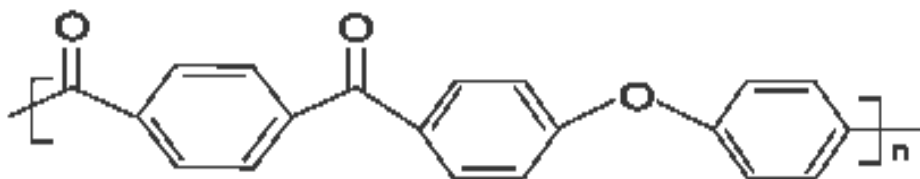


PEKK Polyether Ketone Ketone (GAPEKK™)

Gharda Chemicals Limited GAPEKK™ High Performance polymer combines High Temperature Stability, Strength, Stiffness and ease of processing. GAPEKK™ has very high load bearing capacity in High Performance polymer family. Excellent Creep Resistance and inherent Flame Retardancy.



PEKK : Polyether Ketone Ketone

Key points for GAPEKK™ High Performance Polymer:

- Highest Compressive Strength in Ketone family
- Retention of Mechanical and Physical properties upto 300°C, higher than any engineering polymer.
- Higher Load bearing capacity without permanent deformation.
- Excellent Gamma Radiation Resistance, Hydrolysis Resistance and Chemical Resistance.
- Excellent Electrical Resistance at Higher Temperature.
- Expected Continuous use Temperature upto 300°C



Oil and Gas Industries, Aerospace, Subsea connectors

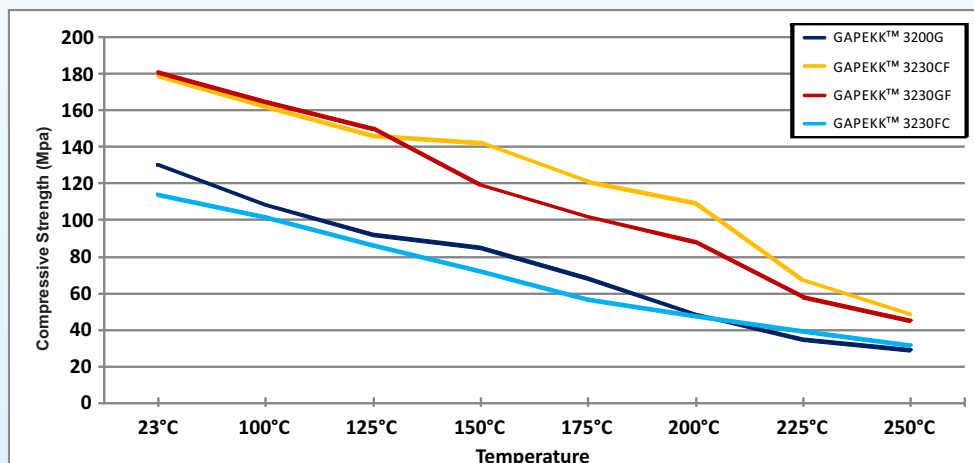


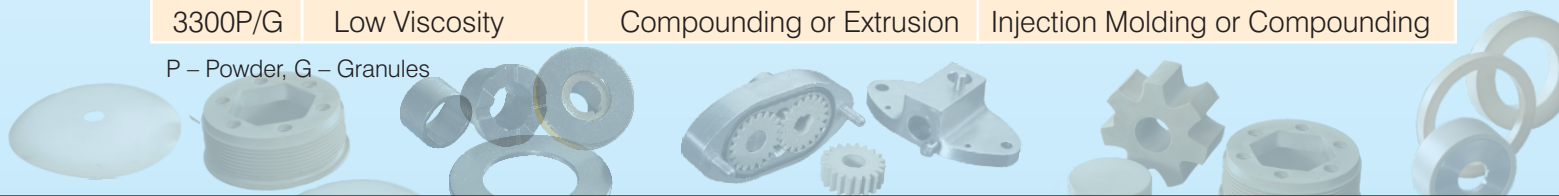
Fig. 1 Compressive Strength at Elevated Temperature

GAPEKK™ Grades:

Gharda Chemicals Limited also provides Unfilled as well as filled grades as per market and customer requirement and according to applications.

Grade	Viscosity	Powder Application	Granule Application
3100P	High Viscosity	Compression Molding	-
3200P/G	Medium Viscosity	Compounding or Extrusion	Injection Molding or Stock Shape
3300P/G	Low Viscosity	Compounding or Extrusion	Injection Molding or Compounding

P – Powder, G – Granules



PEKK Polyether Ketone Ketone (GAPEKK™)

Typical Properties	Test Method /Conditions	Unit	GAPEKK™ 3200G	GAPEKK™ 3300G	GAPEKK™ 3230GF	GAPEKK™ 3230CF	GAPEKK™ 3230FC
General properties							
Density	23°C	g/cc	1.31	1.31	1.5	1.4	1.45
Water Absorption	ASTM D 570-98	%	0.08	0.08	0.05	0.05	0.05
Rockwell Hardness	ASTM D 785/M scale	-	82	82	85	85	83
Thermal properties							
Glass Transition Temperature	ASTM D 3418	°C	176	176	176	176	176
Melting Point	ASTM D 3418	°C	396	396	396	396	396
Heat Deflection Temperature	ASTM D 648/1.8 Mpa	°C	185	180	372	369	363
Continuous use temperature*	UL 746B	°C	300	300	300	300	300
Mechanical properties							
Tensile strength	ASTM D 638	MPa	110	85	170	260	130
Tensile modulus	ASTM D 638	GPa	4	4	11.5	28.4	18
Elongation at break	ASTM D 638	%	15	10	2	2.5	2
Flexural strength	ASTM D 790	MPa	190	185	261	435	215
Flexural Modulus	ASTM D 790	GPa	4.4	4.4	11.9	26.3	14
Compressive strength	ASTM D 695	MPa	145	129	162	196	165
Izod Impact strength (Notched)	ASTM D 256	J/m	45	35	60	60	40
Izod Impact Strength (Un Notched)	ASTM D 256	J/m	NB	NB	NB	NB	NB
Electrical properties							
Surface resistivity	ASTM D 257	Ω	1.0 X 10 ¹⁶	1.0 X 10 ¹⁶	1.0 X 10 ¹⁶	1.0 X 10 ¹¹	1.0 X 10 ¹⁶
Volume Resistivity	ASTM D 257	Ωcm	1.0 X 10 ¹⁶	1.0 X 10 ¹⁶	1.0 X 10 ¹⁶	1.0 X 10 ¹¹	1.0 X 10 ¹⁶
Flammability	UL 94/0.8 mm	-	V-0	v-0	V-0	V-0	V-0

*All the properties are tested under standard Laboratory conditions *Material Tested upto 300°C continuously in Gharda Laboratory

The addition of Glass fibre reinforcement drastically increases the mechanical properties at various temperatures. Addition of Carbon Fibre filled grades helps in reduction of thermal expansion rates and improves thermal conductivity. We also have specialized wear grade for tribological applications mainly for textile, automotive industry.

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