



ACETAL HOMOPOLYMER

TS Team Aug. 2024

KOREA POLYACETAL CO., LTD.



KEPITAL Homo Polymer

- High Viscosity and Unfilled POM homopolymer
- High Strength, Hardness and Rigidity without Filler Reinforcements or Modifications
- High Toughness, High Impact Strength, and Elongation without Impact Modifiers
- Wide Processing Window for Injection Molding
- Excellent Resistance to Moisture, Gasoline, Solvents and Various Other Neutral Chemicals
- Excellent Dimensional Stability for Precision Parts
- Excellent Self-Lubricating

01 Chemical Structure



Structure of POM Homopolymer and Copolymer

POM homopolymer has the simplest chemical structure of all the polyethers, which boost the mechanical properties of POM homopolymer compared to copolymer.





02 Mechanical Property

Properties	Unit	Test Method	KEPITAL H100	KEPITAL HL100	KEPTIAL HT130
Physical properties					
Density	g/cm ³	ISO 1183	1.41	1.42	1.33
Melt Flow Rate (MFR 190°C, 2.16kg)	g/10 min	ISO 1133	2.2	2.2	2.0
Mechanical Properties (23 °C, 50 % R.H.)					
Tensile Stress	MPa	ISO 527	70	65	40
Elongation at Yield	%	ISO 527	20	21	25
Elongation at Break	%	ISO 527	45	43	100 >
Flexural Strength	MPa	ISO 178	87	87	45
Flexural Modulus	MPa	ISO 178	2,650	2,640	1,350
Notched Charpy Impact Strength(at 23°C)	kJ/m²	ISO 179	11	10	70
Thermal Properties					
Heat Deflection Temperature (1.8 MPa)	°C	ISO 75	95	100	70
Melting Point DSC, 10°C/10min	°C	ISO 3146	176	177	175

KPAC Engineering Plastics

KEPITAL® H100

• High viscosity unfilled Homo-POM with excellent mechanical properties

KEPITAL® HL100

• High viscosity Homo-POM which has good mechanical properties and creep resistance compared to other types of anti friction & wear grades

KEPITAL® HT130

• KEPITAL HT130 BBK is a super tough, high viscosity Homo-POM with superior impact strength.



Excellent Tensile Properties Compared to POM Copolymer



- The mechanical properties should be the principal guideline for selecting material from an engineer's point of view.
- KEPITAL® H100 has excellent tensile properties compared to POM copolymer.
- KEPITAL[®] H100 has similar yield stress and strain compared to other POM homopolymer.

04 Creep Resistance

Engineering Plastics

Tensile Creep Resistance Compared to Competitor's



• When static stress is applied to plastics, the initial strain occurs, and due to their viscoelastic property, an incremental strain follows as time passes.

• Less deformation under the load means that certain material has better deformation resistance properties.

05 Flowability



Superior Flowability Compared to Competitor's



KEPITAL[®] H100









06 Void Reduction



Reduction in Void Occurrence under Injection Molding







KEPITAL[®] H100 Exhibit Similar Gear Tooth Strength Compared to Competitor's



- KEPITAL® H100 has excellent gear tooth strength compared to POM copolymer.
- KEPITAL[®] H100 has similar gear tooth strength compared to competitor's

Gear tooth strength

	Unit	H100	Competitor's	POM copolymer
Results	kg _f ∙ cm	137	137	125

Gear specifications

Item	Value	
Gear Type	Spur Gear	
Number of Gear Teeth	48 each	
Pressure Angle of Gear	15°	
Gear Module	0.9	

KEPITAL® HL100

• High viscosity Homo-POM which has excellent tribological properties under moving conditions against various counterpart.

POM (Rotational)

Steel, POM, or Others (Fixed)



<Thrust washer tester (Ring-on-Ring type)>

Ring on Ring		KEPITAL HL100	Competitor's
vs Resin (70N, 100 mm/s, 120 min)	Friction Coefficient (-)	0.2	0.4
	Specific Wear (mm ³ /kgf.km)	0.06	5.64
vs Metal (120N, 300 mm/s, 120 min)	Friction Coefficient	0.23	0.36
	Specific Wear (mm³/kgf.km)	0.05	0.10
Ring on	KEPITAL HL100	Competitor's	
vs Polyester coated plate (70 N, 100 mm/s, 120 min)	Friction Coefficient (-)	0.21	0.26
	Specific Wear (mm ³ /kgf.km)	0.05	0.08



09 Application

Window Motor



• H100

Door Latch



H100

Extrusion Rod & Plate



Window Regulator



HL100

Roller



H100

• H100

Conveyer Belt



Clip & Fastener



H100HT130

Washing M/C Gear



• H100

Seat Belt Module



HT130

E&E Gear



- H100
- HL100



_ Engineering Plastics

THANK YOU

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