POKETONE™
HYOSUNG POLYKETONE

High-flow injection moulding grade

POKETONE Polymer M330A

POKETONE Thermoplastic Polymers are aliphatic polyketones, a revolutionary new class of semi-crystalline thermoplastics. Hyosung developed new catalyst to produce this unique polymer in 2013 and constructed commercial plant in 2015, in Ulsan, Korea.

POKETONE Polymer M330A is a high-flow injection moulding grade with mechanical properties which classify it as an engineering thermoplastic.

This grade exhibits very good processability, good impact resistance, high resilience and good creep performance. POKETONE Polymer M330A can also withstand short-term exposure to elevated temperatures.

Moreover This polymer exhibits high resistance to hydrocarbons, solvents, salt solutions, weak acids and weak bases.

POKETONE Polymer M330A is a high-flow, low-viscosity polymer that should be considered for mouldings with long flow paths or thin walls. This grade is very easy to process on standrad injection moulding equipment.

Cycle times are generally short. Parts show good mould definition with glossy mar-resistant surfaces. POKETONE Polymer's low moisture sensitivity means that no conditioning of parts before assembly or use is necessary.

Applications for POKETONE Polymer M330A may be found in the automotive, electrical, electronics, undustrial and consumer applicance markets.

TABLE 1 : TYPICAL MECHANICAL PROPERTIES OF POKETONE POLYMER M330A – Measured at 23℃

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Tensile strength at yield	D638	527-1	60 MPa	60 MPa
Tensile modulus	D638	527-1	1,600 MPa	1,500 MPa
Tensile elongation at yield	D638	527-1	21%	21%
Tensile elongation at break	D638	527-1	300%	300%
Flexural strength	D790	178	57 MPa	57 MPa
Flexural modulus	D790	178	1,500 MPa	1,400 MPa
Unnotched Charpy impact strength	-	179/1eU	-	N.B.
Notched Charpy impact strength 23℃ -10℃ -30℃	-	179/1eA	-	 8 kJ/m^2 4 kJ/m^2 2 kJ/m^2
Unnotched Izod impact strength	D256	180/U	N.B.	N.B.
Notched Izod impact strength 23℃ -10℃ -30℃	D256	180/A	 95 J/m 60 J/m 40 J/m	 7 kJ/m^2 4 kJ/m^2 3 kJ/m^2
Falling dart impact strength	-	6603-2	-	50 J

TABLE 2: TYPICAL PHYSICAL PROPERTIES OF POKETONE POLYMER M330A – Measured at 23℃

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Specific gravity	D792	1183	1.24g/cm^3	1.24g/cm^3
Shore D hardness	D2240	868	-	73
Hardness Rockwell	D785	-	110	-
Water absorption equilibrium at 50% RH	D570	62	0.5%	0.5%
Water absorption at saturation	D570	62	2.1%	2.1%

TABLE 3: TYPICAL THERMAL PROPERTIES OF POKETONE POLYMER M330A

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Melting temperature	D3418	11357	222℃	222℃
Conefficient of linear thermal Expansion, 25℃ to 55℃	E831 TD MD	-	 8.0*10^{-3} 9.7*10^{-5}	-
Vicat softening point	D1525 5 kg	306/B50 50 N	195℃	190℃
Heat deflection temperature	D648 66psi 264psi	75 0.45 MPa 1.8 MPa	200℃ 105℃	190℃ 92℃

TABLE 4: TYPICAL PROCESS RELATED PROPERTIES OF POKETONE POLYMER M330A

	Test Method & Conditions		ASTM Values	ISO Values
	ASTM	ISO	SI	SI
Melting temperature	D3418	11357	222℃	222℃
Melt flow index 240℃ /2.16kg	D1238	1133	60 g/10 min	56㎖/ 10min
Mould shrinkage	D955 MD, 3 mm TD, 3 mm MD, 2 mm TD, 2 mm	-	2.0% 2.0% 1.6% 1.5%	-

TABLE 5: TYPICAL ELECTRICAL PROPERTIES OF POKETONE POLYMER M330A

	Test Method & Conditions		ASTM Values	IEC Values
	ASTM	IEC	SI	SI
Dielectric sterngth, Short term	D149 3 mm 2 mm	-	15 kV/min 19 kV/min	-
Volume resistivity	D257	-	10^{14} ohm cm	-
Surface resistivity	D257	-	10^{17} ohm/sq	-
Arc resistance	D495	-	130 sec	-
CTI	UL 746A	112	-	600V
Dielectric constant at 60Hz	D150	250	6.2	5
Dissipation factor at 60Hz	D150	250	0.008	0.013

TABLE 6: TYPICAL FLAMMABILITY PROPERTIES OF POKETONE POLYMER M330A

	Test Method & Conditions	Values
Flame resistance	UL94	HB
Glow wire flammability index	IEC 60695-2-12	700℃
Glow wire Ignition temperature	IEC 60695-2-12	725℃

TABLE 7: UL-746A SHORT TERM PERFORMANCE CATEGORIES FOR POKETONE POLYMER M330A

	Minimum Thickness (mm)		
	0.8	1.5	3.0
HWI	4	3	2
HAI	0	0	0
HVTR	-	-	0
CTI	-	-	0