

POKETONE® M33AS1A

General

Feature	Lubricated high-flow injection molding grade
Special Characteristics	Excellent wear resistance, Low NVH
Processing method	Injection molding
Certification	RoHs, Free of PAHs, Free of Halogen, SVHC
Colors available	Natural, Black, White, Blue, Green, Red
UL File number	-
Form	Pellet
Applications	Gear

Physical Properties

	ASTM	Value	ISO	Value
Density	D792	1.24 g/cm ³	1183	1.24 g/cm ³
Shore D hardness	D2240		868	75
Hardness Rockwell	D785	113	2039	
Water absorption equilibrium at RH 50%	D570	0.6 %	62	0.6 %
Water absorption at Saturation	D570	2.2 %	62	2.2 %
Melt flow index 240°C/2.16kg	D1238	49 g/10 min	1133	46 ml/10 min
	D955		294-4	
Mold Shrinkage	MD, 3 mm	2.0 %		
	TD, 3 mm	2.0 %		
	MD, 2 mm	1.6 %		
	TD, 2 mm	1.6 %		

Mechanical Properties

	ASTM	Value	ISO	Value
Tensile strength at yield	D638	60 MPa	527-1	60 MPa
Tensile modulus	D638	1,550 MPa	527-1	1,450 MPa
Tensile elongation at yield	D638	21 %	527-1	21 %
Tensile elongation at break	D638	200 %	527-1	200 %
Flexural strength	D790	57 MPa	178	56 MPa
Flexural modulus	D790	1,500 MPa	178	1,400 MPa
Unnotched Izod impact strength	D256		180/1U	
Notched Izod impact strength	D256	76 J/m	180/1A	7 kJ/m ²
Unnotched Charpy impact strength	D6110		179/1eU	

Notched Charpy impact strength	D6110	179/1eA	7 kJ/m ²
Falling dart impact strength		6603-2	

Thermal Properties	ASTM	Value	ISO	Value
Melting temperature	D3418	222 °C	11357	222 °C
Coefficient of linear thermal expansion, 25 ~ 55°C	E831 TD MD	9.7×10 ⁻⁵ 1.0×10 ⁻⁴	11359	
Vicat softening point	D1525 5 kg	187 °C	306/B50 50 N	187 °C
Heat deflection temperature	D648 66 psi 264 psi	190 °C 100 °C	75 0.45 MPa 1.8 MPa	185 °C 82 °C

Wear & Abrasion Resistance	Pin on Disk	Thrust Washer
* Condition	1.3 MPa, 0.06 m/sec	0.4 MPa, 0.12 m/sec
Dynamic coefficient of Friction against self		0.17
Dynamic coefficient of Friction against steel		0.27
Wear factor against self		0.0010 mm ³ /N·km
Wear factor against steel		0.010 mm ³ /N·km
Taber abrasion 1kg load, CS-17 wheel	ASTM D1044	

Electrical Properties	Test Method & Condition	Value
	ASTM D149	
Dielectric Strength (DS)	3 mm 2 mm	16 kV/mm 19 kV/mm
Volume Resistivity (VR)	ASTM D257	10 ¹³ Ω·cm
Surface Resistivity (SR)	ASTM D257	10 ¹⁷ Ω /m ²
Dielectric constant at 60Hz	ASTM D150	6.1
Dissipation factor at 60Hz	ASTM D150	0.014

Injection Molding Processing Conditions	Value
Pre-drying Drying temperature	80 °C

Temperature	Drying time	3 ~ 4 hr
	Suggested max moisture	0.20 %
	Nozzle temperature	240 °C
	Zone 1 temperature	230 °C
	Zone 2 temperature	220 °C
	Zone 3 temperature	215 °C
	Zone 4 temperature	210 °C
	Processing temperature	225 ~ 240 °C
	Mold temperature	80 °C
Pressure	Back pressure	0.294 ~ 0.686 MPa
Speed	Screw Speed	50 ~ 100 rpm

* The data listed here is not for specification warranty, but typical value.

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