

POKETONE® M33-R3A000 (M33AR3B)

General

Feature	Lubricated high-flow injection molding grade
Special Characteristics	Excellent wear resistance
Processing method	Injection molding
Certification	Free of Bisphenol A, RoHs, Free of PAHs, Free of Halogen, SVHC
Colors available	Natural
UL File number	-
Form	Pellet
Applications	Refrigerator door closer

Physical Properties

	ASTM	Value	ISO	Value
Density	D792	1.23 g/cm ³	1183	1.23 g/cm ³
Shore D hardness	D2240		868	73
Hardness Rockwell	D785	100	2039	
Water absorption equilibrium at RH 50%	D570	0.5 %	62	0.5 %
Water absorption at Saturation	D570	2.3 %	62	2.3 %
Melt flow index 240°C/2.16kg	D1238	68 g/10 min	1133	64 ml/10 min
Mold Shrinkage	D955		294-4	
	MD, 3 mm	1.6 %		
	TD, 3 mm	1.6 %		
	MD, 2 mm	1.2 %		
	TD, 2 mm	1.4 %		
	MD, 1 mm	1.3 %		
	TD, 1 mm	1.4 %		

Mechanical Properties

	ASTM	Value	ISO	Value
Tensile strength at yield	D638	48 MPa	527-1	58 MPa
Tensile modulus	D638	1,400 MPa	527-1	1,350 MPa
Tensile elongation at yield	D638	25 %	527-1	22 %
Tensile elongation at break	D638	300 %	527-1	300 %
Flexural strength	D790	45 MPa	178	53 MPa
Flexural modulus	D790	1,250 MPa	178	1,250 MPa
Unnotched Izod impact strength	D256	N.B.	180/1U	N.B.
Notched Izod impact strength	D256	380 J/m	180/1A	21 kJ/m ²

Unnotched Charpy impact strength	D6110	179/1eU	N.B.
Notched Charpy impact strength	D6110	179/1eA	21 kJ/m ²
Falling dart impact strength		6603-2	23 °C

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	11.4×10 ⁻⁵ 11.6×10 ⁻⁵	11359	
Vicat softening point	D1525 5 kg	174 °C	306/B50 50 N	174 °C
Heat deflection temperature	D648 66 psi 264 psi	180 °C 85 °C	75 0.45 MPa 1.8 MPa	175 °C 70 °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	0.45	0.35
Dynamic coefficient of Friction against steel	0.32	0.14
Wear factor against self	0.0084 mm ³ /N·km	0.0094 mm ³ /N·km
Wear factor against steel	0.068 mm ³ /N·km	0.003 mm ³ /N·km
Taber abrasion 1kg load, CS-17 wheel	ASTM D1044	

Electrical Properties	Test Method & Condition	Value
Dielectric Strength (DS)	ASTM D149	17 kV/mm
Volume Resistivity (VR)	ASTM D257	10 ¹⁴ Ω·cm
Surface Resistivity (SR)	ASTM D257	10 ¹⁶ Ω/m ²
Dielectric constant at 60Hz	ASTM D150	5.8
Dissipation factor at 60Hz	ASTM D150	0.013

Injection Molding Processing Conditions	Value
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Pre-drying	Drying temperature	80 °C
	Drying time	3 ~ 4 hr
	Suggested max moisture	0.20 %
Temperature	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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