

Technical Data

Product Description

DURACON®
M90-44

Standard

Generic
Acetal (POM) Copolymer

This data represents typical values that have been calculated from all products classified as: Generic Acetal (POM) Copolymer

This information is provided for comparative purposes only.

General	DURACON® M90-44	Generic Acetal (POM) Copolymer
Manufacturer / Supplier	• Polyplastics	• Generic
Generic Symbol	• Acetal (POM) Copolymer	• Acetal (POM) Copolymer
Material Status	• Commercial: Active	• Commercial: Active
Literature ¹	• Technical Datasheet (English)	--
UL Yellow Card ²	• E45034-100337529 • E45034-235766	--
Search for UL Yellow Card	• Polyplastics • DURACON®	--
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Features	• Copolymer	--
UL File Number	• E45034	--
Forms	• Pellets	--
Processing Method	• Injection Molding	--
Part Marking Code (ISO 11469)	• >POM<	--
Also Available In	--	• Asia Pacific • Europe • Latin America • North America

Physical	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Density / Specific Gravity	--	1.38 to 1.44	g/cm ³	ASTM D792
	1.41	1.40 to 1.41	g/cm ³	ISO 1183
Apparent (Bulk) Density	--	0.84 to 0.85	g/cm ³	ISO 60
Melt Mass-Flow Rate (MFR)				
190°C/2.16 kg	--	8.5 to 28	g/10 min	ASTM D1238
190°C/2.16 kg	9.0	1.0 to 28	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR) (190°C/2.16 kg)	8.0	0.60 to 26	cm ³ /10min	ISO 1133
Molding Shrinkage				
Flow	--	0.23 to 31	%	ASTM D955
Across Flow	--	2.0 to 2.1	%	ASTM D955
--	--	1.8 to 2.2	%	ISO 294-4
Across Flow : 2.00 mm ⁴	2.1	--	%	ISO 294-4
Flow : 2.00 mm ⁴	2.3	--	%	ISO 294-4



Physical	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Water Absorption				
24 hr	--	0.20 to 0.25	%	ASTM D570
24 hr, 23°C	--	0.10 to 0.71	%	ISO 62
24 hr, 23°C, 1.00 mm	0.50	--	%	ISO 62
Saturation	--	0.79 to 0.98	%	ASTM D570
Saturation, 23°C	--	0.60 to 0.84	%	ISO 62
Equilibrium	--	0.20 to 0.26	%	ASTM D570
Equilibrium, 23°C, 50% RH	--	0.20 to 0.21	%	ISO 62
Mechanical	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Tensile Modulus				
--	--	1240 to 3220	MPa	ASTM D638
--	2700	2040 to 3470	MPa	ISO 527-1
Tensile Strength				
Yield	--	54.0 to 64.5	MPa	ASTM D638
Yield	--	55.0 to 67.7	MPa	ISO 527-2
Break	--	33.3 to 68.1	MPa	ASTM D638
Break	--	33.8 to 66.8	MPa	ISO 527-2
--	--	36.9 to 66.2	MPa	ASTM D638
--	62.0	42.3 to 66.2	MPa	ISO 527-2
Tensile Elongation				
Yield	--	8.3 to 10	%	ASTM D638
Yield	--	4.0 to 15	%	ISO 527-2
Break	--	1.0 to 73	%	ASTM D638
Break	--	1.2 to 71	%	ISO 527-2
Nominal Tensile Strain at Break	35	14 to 50	%	ISO 527-2
Tensile Creep Modulus				
1 hr	--	2400	MPa	ISO 899-1
1000 hr	--	1300	MPa	
Flexural Modulus				
--	--	1700 to 2730	MPa	ASTM D790
--	2500	1990 to 2970	MPa	ISO 178
Flexural Strength				
--	--	58.0 to 98.0	MPa	ASTM D790
--	87.0	57.7 to 91.3	MPa	ISO 178
Yield	--	89.5 to 98.0	MPa	ASTM D790
Compressive Strength				
--	--	15.9 to 110	MPa	ASTM D695
--	--	22.9 to 94.1	MPa	ISO 604
Poisson's Ratio				
--	--	0.40 to 0.41		ASTM E132
Coefficient of Friction				
--	--	0.050 to 0.48		ASTM D1894
Dynamic ⁵	0.37	--		JIS K7218
vs. Steel - Dynamic ⁶	0.46	--		JIS K7218
vs. Steel - Dynamic ⁷	0.40	--		JIS K7218



Mechanical	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Taber Abrasion Resistance	--	14.0 to 16.7	mg	ASTM D1044
Wear Factor				
0.49 MPa, 0.30 m/sec ⁸	< 1.0	--	10 ⁻⁸ mm ³ /N·m	JIS K7218
0.98 MPa, 0.30 m/sec ⁸	< 1.0	--	10 ⁻⁸ mm ³ /N·m	JIS K7218
0.98 MPa, 0.30 m/sec ⁹	30	--	10 ⁻⁸ mm ³ /N·m	JIS K7218
0.49 MPa, 0.30 m/sec ⁹	65	--	10 ⁻⁸ mm ³ /N·m	JIS K7218
--	--	1.0 to 300	10 ⁻⁸ mm ³ /N·m	ASTM D3702
Impact	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Charpy Notched Impact Strength				
--	--	1.5 to 11	kJ/m ²	ISO 179
23°C	6.0	--	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength	--	34 to 250	kJ/m ²	ISO 179
Notched Izod Impact				
--	--	38 to 100	J/m	ASTM D256
--	--	3.0 to 7.1	kJ/m ²	ISO 180
Unnotched Izod Impact				
--	--	55 to 1500	J/m	ASTM D4812
--	--	20 to 110	kJ/m ²	ISO 180
Hardness	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Rockwell Hardness				
--	--	78 to 117		ASTM D785
--	--	79 to 81		ISO 2039-2
M-Scale	80	--		ISO 2039-2
Shore Hardness	--	79 to 81		ISO 868
Ball Indentation Hardness	--	129 to 157	MPa	ISO 2039-1
Thermal	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	--	154 to 163	°C	ASTM D648
0.45 MPa, Unannealed	--	139 to 160	°C	ISO 75-2/B
1.8 MPa, Unannealed	--	97.7 to 110	°C	ASTM D648
1.8 MPa, Unannealed	95.0	78.4 to 113	°C	ISO 75-2/A
Continuous Use Temperature	--	65.0 to 100	°C	ASTM D794
Vicat Softening Temperature				
--	--	150 to 162	°C	ASTM D1525
--	--	144 to 167	°C	ISO 306
Melting Temperature				
--	--	165 to 166	°C	DSC
--	--	165 to 167	°C	ISO 11357-3
--	--	167 to 168	°C	ASTM D3418
--	--	165 to 170	°C	ISO 3146



Thermal	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
CLTE				
Flow	--	1.9E-5 to 1.3E-4	cm/cm/°C	ASTM D696
Flow	--	5.8E-5 to 1.2E-4	cm/cm/°C	ASTM E831
Flow	--	9.6E-5 to 1.4E-4	cm/cm/°C	ISO 11359-2
Flow : 23 to 55°C	1.2E-4	--	cm/cm/°C	Internal Method
Transverse	--	1.1E-4 to 1.2E-4	cm/cm/°C	ISO 11359-2
Transverse : 23 to 55°C	1.2E-4	--	cm/cm/°C	Internal Method
Specific Heat	--	1460 to 1500	J/kg/°C	ASTM C351
Thermal Conductivity	--	0.23	W/m/K	ASTM C177
RTI Str	--	90.0 to 105	°C	UL 746B
Electrical	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Surface Resistivity				
--	--	5.0 to 5.8E+16	ohms	ASTM D257
--	1.0E+16	5.5 to 1.1E+16	ohms	IEC 60093
--	--	1.0E+3 to 7.5E+14	ohms	IEC 62631-3-2
Volume Resistivity				
--	--	5.0 to 5.5E+15	ohms·cm	ASTM D257
--	1.0E+14	5.5 to 2.5E+16	ohms·cm	IEC 60093
--	--	3.0 to 1.0E+12	ohms·m	IEC 62631-3-1
Dielectric Strength				
--	--	18 to 24	kV/mm	ASTM D149
--	--	18 to 37	kV/mm	IEC 60243-1
3.00 mm	19	--	kV/mm	IEC 60243-1
Dielectric Constant				
--	--	3.67 to 3.91		ASTM D150
--	--	3.75 to 4.00		IEC 60250
--	--	3.75		IEC 60250
Dissipation Factor				
--	--	3.8E-4 to 9.3E-3		ASTM D150
--	--	1.0E-3 to 0.014		IEC 60250
Arc Resistance	--	240 to 250	sec	ASTM D495
Flammability	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Flame Rating	HB	--		UL 94
Fill Analysis	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	Test Method
Melt Density	--	1.20	g/cm³	
Melt Specific Heat	--	2210	J/kg/°C	ASTM C351
Melt Thermal Conductivity	--	0.16	W/m/K	ASTM C177
Ejection Temperature	--	140	°C	
Additional Information	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit	
Color Number	CF2001/CD3068	--		



Injection	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit
Drying Temperature	80 to 90	79 to 123	°C
Drying Time	3.0 to 4.0	1.9 to 4.1	hr
Suggested Max Moisture	--	0.096 to 0.20	%
Hopper Temperature	--	25 to 200	°C
Rear Temperature	--	169 to 175	°C
Middle Temperature	--	180 to 185	°C
Front Temperature	--	185 to 201	°C
Nozzle Temperature	--	190 to 200	°C
Processing (Melt) Temp	190 to 210	189 to 211	°C
Mold Temperature	60 to 80	69 to 100	°C
Injection Pressure	50.0 to 100	5.25 to 86.3	MPa
Holding Pressure	--	52.9 to 55.1	MPa
Back Pressure	--	0.172 to 4.09	MPa
Screw Speed	100 to 150	45 to 175	rpm
Injection Velocity	0 to 3	--	m/min

Injection Notes

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Extrusion	DURACON® M90-44	Generic Acetal (POM) Copolymer	Unit
Melt Temperature	--	185 to 188	°C

Extrusion Notes

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Notes

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

³ Typical properties: these are not to be construed as specifications.

⁴ 60x60x20mmt, Cavity Pressure 60 MPa

⁵ vs M90-44, 0.06 MPa, 15 cm/s

⁶ 0.49 MPa, 30 cm/s

⁷ 0.98 MPa, 30 cm/s

⁸ vs C-Steel, Steel Side

⁹ vs C-Steel, Material Side

