

ForTii® Ace MX52

DSM Engineering Plastics - Polyphthalamide

Tuesday, January 21, 2020

General Information

Product Description

40% Glass Reinforced, PA4T, Heat Stabilized, for Automotive applications

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Filler / Reinforcement	• Glass Fiber, 40% Filler by Weight		
Additive	• Heat Stabilizer		
Features	• Heat Stabilized		
Uses	• Automotive Applications		
Processing Method	• Injection Molding		
Resin ID (ISO 1043)	• PPA-GF40		

ASTM & ISO Properties ¹

Physical	Dry	Conditioned	Unit	Test Method
Density	1.55	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	1.0	--	%	
Flow	0.35	--	%	
Water Absorption				ISO 62
Equilibrium, 23°C, 50% RH	1.6	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				ISO 527-2
--	14500	14500	MPa	
-40°C	15000	--	MPa	
40°C	14000	--	MPa	
80°C	13500	--	MPa	
100°C	13100	--	MPa	
120°C	12800	--	MPa	
150°C	9500	--	MPa	
160°C	8000	--	MPa	
180°C	6500	--	MPa	
200°C	5900	--	MPa	

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Stress				ISO 527-2
Break	220	220	MPa	
Break, -40°C	270	--	MPa	
Break, 40°C	210	--	MPa	
Break, 80°C	190	--	MPa	
Break, 100°C	180	--	MPa	
Break, 120°C	165	--	MPa	
Break, 150°C	125	--	MPa	
Break, 160°C	110	--	MPa	
Break, 180°C	95.0	--	MPa	
Break, 200°C	84.0	--	MPa	
Tensile Strain				ISO 527-2
Break	2.2	2.2	%	
Break, -40°C	2.5	--	%	
Break, 40°C	2.1	--	%	
Break, 80°C	2.1	--	%	
Break, 100°C	2.3	--	%	
Break, 120°C	2.4	--	%	
Break, 150°C	3.6	--	%	
Break, 160°C	4.5	--	%	
Break, 180°C	5.6	--	%	
Break, 200°C	6.0	--	%	
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	12	--	kJ/m ²	
23°C	11	11	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	60	--	kJ/m ²	
23°C	65	65	kJ/m ²	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				ISO 75-2/A
1.8 MPa, Unannealed	320	--	°C	
Melting Temperature ²	335	--	°C	ISO 11357-3
CLTE - Flow	2.8E-5	--	cm/cm/°C	ASTM D696
CLTE - Flow	1.7E-5	--	cm/cm/°C	ISO 11359-2
CLTE - Transverse	3.5E-5	--	cm/cm/°C	ASTM D696
CLTE - Transverse	5.4E-5	--	cm/cm/°C	ISO 11359-2

Notes

¹ Typical properties: these are not to be construed as specifications.

² 10°C/min