

# ForTii® MX2

DSM Engineering Plastics - Polyphthalamide

Saturday, January 18, 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 <sup>1</sup>

Physical	Dry	Conditioned	Unit	Test Method
Density	1.55	--	g/cm <sup>3</sup>	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	14500	--	MPa	
40°C	14200	--	MPa	
80°C	13800	--	MPa	
100°C	12500	--	MPa	
120°C	9500	--	MPa	
150°C	6700	--	MPa	
160°C	6300	--	MPa	
180°C	5500	--	MPa	
200°C	5300	--	MPa	

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Stress				ISO 527-2
Break	220	210	MPa	
Break, -40°C	240	--	MPa	
Break, 40°C	210	--	MPa	
Break, 80°C	190	--	MPa	
Break, 100°C	160	--	MPa	
Break, 120°C	130	--	MPa	
Break, 150°C	100	--	MPa	
Break, 160°C	95.0	--	MPa	
Break, 180°C	90.0	--	MPa	
Break, 200°C	82.0	--	MPa	
Tensile Strain				ISO 527-2
Break	2.1	2.0	%	
Break, -40°C	2.1	--	%	
Break, 40°C	2.2	--	%	
Break, 80°C	2.5	--	%	
Break, 100°C	3.0	--	%	
Break, 120°C	5.1	--	%	
Break, 150°C	6.9	--	%	
Break, 160°C	7.0	--	%	
Break, 180°C	7.0	--	%	
Break, 200°C	7.0	--	%	
Flexural Modulus				ISO 178
--	14200	--	MPa	
120°C	9800	--	MPa	
160°C	6000	--	MPa	
Flexural Stress	340	--	MPa	ISO 178
<b>Impact</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	9.0	--	kJ/m <sup>2</sup>	
23°C	9.0	--	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	55	--	kJ/m <sup>2</sup>	
23°C	65	55	kJ/m <sup>2</sup>	
<b>Thermal</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Heat Deflection Temperature				ISO 75-2/A
1.8 MPa, Unannealed	305	--	°C	
Melting Temperature <sup>2</sup>	325	--	°C	ISO 11357-3
CLTE - Flow	3.0E-5	--	cm/cm/°C	ASTM D696
CLTE - Transverse	3.5E-5	--	cm/cm/°C	ASTM D696
<b>Electrical</b>	<b>Dry</b>	<b>Conditioned</b>	<b>Unit</b>	<b>Test Method</b>
Volume Resistivity	> 1.0E+15	> 1.0E+15	ohms-cm	IEC 60093
Relative Permittivity				IEC 60250
100 Hz	4.90	5.70		
1 MHz	4.60	4.80		

### Notes

<sup>1</sup> Typical properties: these are not to be construed as specifications.

<sup>2</sup> 10°C/min