

# ForTii® Ace MX51

DSM Engineering Plastics - Polyphthalamide

Saturday, January 18, 2020

## General Information

### Product Description

30% 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, 30% Filler by Weight		
Additive	• Heat Stabilizer		
Features	• Heat Stabilized		
Uses	• Automotive Applications		
Processing Method	• Injection Molding		
Resin ID (ISO 1043)	• PPA-GF30		

## ASTM & ISO Properties <sup>1</sup>

Physical	Dry	Conditioned	Unit	Test Method
Density	1.45	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	1.1	--	%	
Flow	0.40	--	%	
Water Absorption				ISO 62
Equilibrium, 23°C, 50% RH	1.8	--	%	
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				ISO 527-2
--	11000	11000	MPa	
-40°C	12000	--	MPa	
40°C	11000	--	MPa	
80°C	10500	--	MPa	
100°C	10300	--	MPa	
120°C	10000	--	MPa	
150°C	7500	--	MPa	
160°C	6200	--	MPa	
180°C	5000	--	MPa	
200°C	4500	--	MPa	

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Stress				ISO 527-2
Break	170	170	MPa	
Break, -40°C	220	--	MPa	
Break, 40°C	165	--	MPa	
Break, 80°C	155	--	MPa	
Break, 100°C	150	--	MPa	
Break, 120°C	140	--	MPa	
Break, 150°C	110	--	MPa	
Break, 160°C	97.0	--	MPa	
Break, 180°C	85.0	--	MPa	
Break, 200°C	75.0	--	MPa	
Tensile Strain				ISO 527-2
Break	2.0	2.0	%	
Break, -40°C	2.3	--	%	
Break, 40°C	1.9	--	%	
Break, 80°C	1.9	--	%	
Break, 100°C	2.0	--	%	
Break, 120°C	2.1	--	%	
Break, 150°C	3.5	--	%	
Break, 160°C	4.5	--	%	
Break, 180°C	5.7	--	%	
Break, 200°C	6.0	--	%	
Flexural Modulus	10500	--	MPa	ISO 178
Flexural Stress	270	--	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	9.0	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	40	--	kJ/m <sup>2</sup>	
23°C	45	45	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	317	--	°C	
Melting Temperature <sup>2</sup>	335	--	°C	ISO 11357-3
CLTE - Flow	3.1E-5	--	cm/cm/°C	ASTM D696
CLTE - Flow	1.8E-5	--	cm/cm/°C	ISO 11359-2
CLTE - Transverse	4.2E-5	--	cm/cm/°C	ASTM D696
CLTE - Transverse	5.8E-5	--	cm/cm/°C	ISO 11359-2

### Notes

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

<sup>2</sup> 10°C/min