ExxonMobil

ExxonMobil™ AP3AW

Polypropylene Impact Copolymer

Product Description

An UV stabilized medium impact copolymer resin designed for automotive battery cases.

General

Features	▪ Good UV Resistance ▪ High Stiffness	▪ Low Warpage ▪ Medium Flow	▪ Medium Impact Resistance
Uses	▪ Automotive Applications	▪ Automotive Under the Hood	▪ Battery Cases
Appearance	▪ Natural Color		
Form(s)	▪ Pellets		
Processing Method	▪ Injection Molding		

Physical	Typical Value (English)		Typical Value (SI)		Test Based On
Melt Mass-Flow Rate (MFR) (230°C/2.16 kg)	10	g/10 min	10	g/10 min	ASTM D1238
Density	0.9	g/cm³	0.9	g/cm³	ExxonMobil Method

Mechanical	Typical Value (English)		Typical Value (SI)		Test Based On
Tensile Strength at Yield					ASTM D638
2.0 in/min (51 mm/min)	3930	psi	27.1	MPa	
Tensile Stress at Yield	3730	psi	25.7	MPa	ISO 527-2/50
Elongation at Yield (2.0 in/min (51 mm/min))	5.6	%	5.6	%	ASTM D638
Tensile Strain at Yield	5.7	%	5.7	%	ISO 527-2/50
Tensile Modulus	218000	psi	1500	MPa	ISO 527-2/1
Flexural Modulus - 1% Secant					
0.051 in/min (1.3 mm/min)	194000	psi	1340	MPa	ASTM D790A
0.51 in/min (13 mm/min)	220000	psi	1520	MPa	ASTM D790B
Flexural Modulus (0.079 in/min (2.0 mm/min))	194000	psi	1340	MPa	ISO 178

Impact	Typical Value (English)		Typical Value (SI)		Test Based On
Notched Izod Impact					ASTM D256A
0°F (-18°C)	0.66	ft·lb/in	35	J/m	
73°F (23°C)	1.7	ft·lb/in	90	J/m	
Notched Izod Impact Strength					ISO 180/1A
-40°F (-40°C)	1.6	ft·lb/in²	3.4	kJ/m²	
0°F (-18°C)	2.1	ft·lb/in²	4.5	kJ/m²	
73°F (23°C)	4.2	ft·lb/in²	8.8	kJ/m²	
Charpy Notched Impact Strength					ISO 179/1eA
-22°F (-30°C)	1.5	ft·lb/in²	3.3	kJ/m²	
-4°F (-20°C)	1.9	ft·lb/in²	3.9	kJ/m²	
32°F (0°C)	2.4	ft·lb/in²	4.9	kJ/m²	
73°F (23°C)	4.7	ft·lb/in²	9.9	kJ/m²	
Gardner Impact					ASTM D5420
-20°F (-29°C), 0.125 in (3.18 mm), Geometry GC	160	in·lb	18.1	J	

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Thermal	Typical Value (English)		Typical Value (SI)		Test Based On
Heat Deflection Temperature (1.80 MPa)	128	°F	53.4	°C	ISO 75-2/A
Heat Deflection Temperature (0.45 MPa)	199	°F	92.5	°C	ISO 75-2/Bf
Deflection Temperature Under Load (DTUL) at 66psi - Unannealed	211	°F	99.4	°C	ASTM D648
DTUL @ 66psi - Annealed	241	°F	116	°C	ASTM D648

Hardness	Typical Value (English)	Typical Value (SI)	Test Based On
Rockwell Hardness	96	96	ASTM D785