

Diamond Abs TM-40

Acrylonitrile Butadiene Styrene

LyondellBasell Industries

Engineering Plastics

General			
Features	High Heat Resistance		
Agency Ratings	EC 1907/2006 (REACH)	EU 2002/96/EC (WEEE)	
RoHS Compliance	RoHS Compliant		
UL File NumberUsa	E150937		
Appearance	Black		
Forms	Pellets		
Processing Method	Extrusion	Injection Molding	

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density / Specific Gravity	1.07	1.07 g/cm ³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 Kg)	0.40 g/10 min	0.40 g/10 min	ASTM D1238

Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			
Yield ¹	7100 psi	49.0 MPa	ASTM D638
Yield	6070 psi	41.9 MPa	ISO 527-2
Flexural Modulus			
Tangent ²	317000 psi	2190 MPa	ASTM D790
Chord	327000 psi	2250 MPa	ISO 178

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179
-22°F (-30°C)	3.9 ft·lb/in ²	8.2 kJ/m ²	
73°F (23°C)	6.3 ft·lb/in ²	13 kJ/m ²	
Notched Izod Impact			
-22°F (-30°C)	1.8 ft·lb/in	94 J/m	ASTM D256
73°F (23°C)	2.9 ft·lb/in	160 J/m	ASTM D256
-22°F (-30°C)	3.8 ft·lb/in ²	7.9 kJ/m ²	ISO 180
73°F (23°C)	6.6 ft·lb/in ²	14 kJ/m ²	ISO 180

Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (R-scale)	104	104	ASTM D785

Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 Psi (0.45 Mpa), Unannealed	253 °F	123 °C	ASTM D648
66 Psi (0.45 Mpa), Unannealed	255 °F	124 °C	ISO 75-2/B
264 Psi (1.8 Mpa), Unannealed, 0.125 In (3.18 Mm)	223 °F	106 °C	ASTM D648
264 Psi (1.8 Mpa), Unannealed	217 °F	103 °C	ISO 75-2/A
264 Psi (1.8 Mpa), Annealed, 0.125 In (3.18 Mm)	240 °F	116 °C	ASTM D648
Vicat Softening Temperature			
--	284 °F	140 °C	ASTM D1525
--	279 °F	137 °C	ISO 306
CLTE			ASTM E831
Flow	5.1E-5 in/in/°F	9.1E-5 cm/cm/°C	
Transverse	5.9E-5 in/in/°F	1.1E-4 cm/cm/°C	

Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating (0.06 In (1.6 Mm))	HB	HB	UL 94



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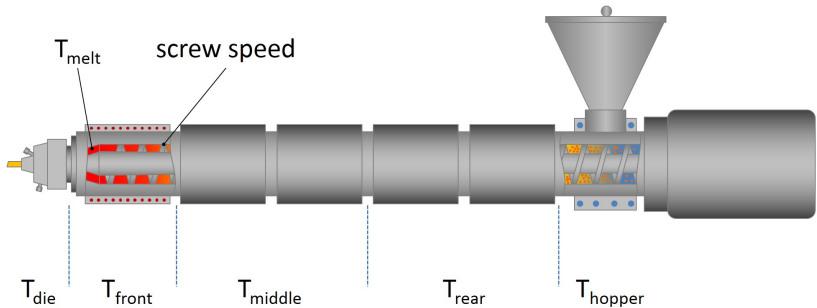


Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	176 to 194 °F	80 to 90 °C
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.10 %	0.10 %
Rear Temperature	392 to 482 °F	200 to 250 °C
Middle Temperature	392 to 482 °F	200 to 250 °C
Front Temperature	392 to 482 °F	200 to 250 °C
Mold Temperature	104 to 176 °F	40 to 80 °C
Injection Pressure	7000 to 11000 psi	48.3 to 75.8 MPa



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Extrusion	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	180 to 200 °F	82 to 93 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr
Suggested Max Moisture	< 0.02 %	< 0.02 %
Suggested Max Regrind	40 %	40 %

Extrusion Notes

Polish roll Top: Down stack 200 F, Up stack 200 F
Polish roll Middle: Down stack 165 F, Up stack 190 F
Polish roll Bottom: Down stack 200 F, Up stack 180 F

Extruder Temperature Profile

Screw Design: 3:1 compression ratio

Feed Throat: Cool water to prevent pellet bridging in the hopper feed throat

Extruder Zone 1: 400-415 F
Extruder Zone 2: 415-425 F
Extruder Zone 3: 420-430 F
Extruder Zone 4: 430-445 F
Extruder Zone 5: 420-430 F
Extruder Zone 6: 420-430 F
Extruder Zone 7: 420-430 F

Breaker Plate: 20/40/80/60/20
Gate: 425-450 F
Melt Temperature: 430-470 F
Melt Pump: 430-450 F

Co-ex block: 425-450 F

Die: Top: 425-450 F
Bottom: 425-450 F

Questions: Contact your AR/DE TS specialist for assistance

Notes

- ¹ 2.0 in/min (51 mm/min)
- ² 0.050 in/min (1.3 mm/min)

typical property values not to be construed as specification limits.