Technical Data Sheet

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/cm³	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/in²	8.2 kJ/m²	
73°f (23°c)	6.3 ft·lb/in²	13 kJ/m²	
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/in²	7.9 kJ/m²	ISO 180
73°f (23°c)	6.6 ft·lb/in²	14 kJ/m²	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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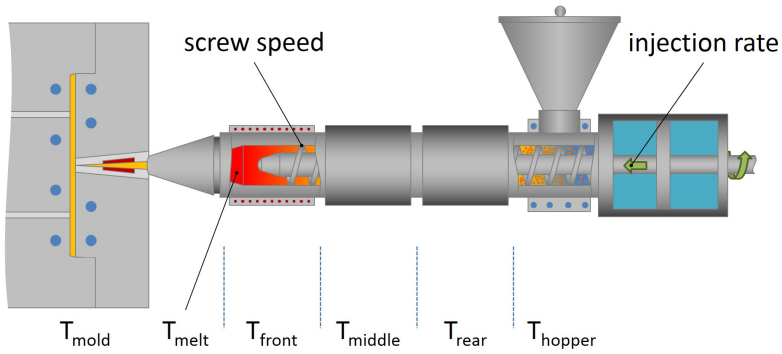

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	176 to 194 °F	80 to 90 °C
Drying Time	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.10 %	0.10 %
Rear Temperature	392 to 482 °F	200 to 250 °C
Middle Temperature	392 to 482 °F	200 to 250 °C
Front Temperature	392 to 482 °F	200 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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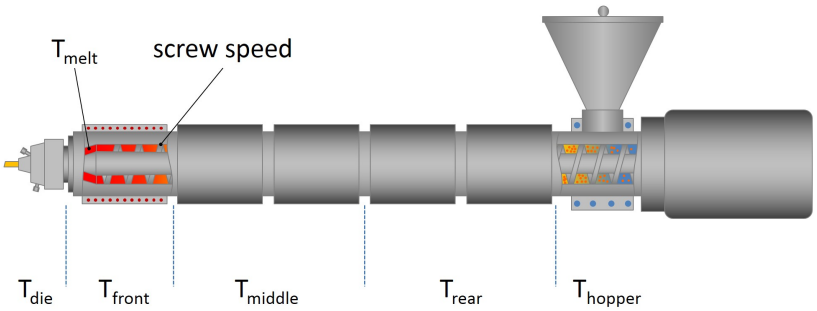

Extrusion	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	180 to 200 °F	82 to 93 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr
Suggested Max Moisture	< 0.02 %	< 0.02 %
Suggested Max Regrind	40 %	40 %

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)

Notes

These are typical property values not to be construed as specification limits.