

**Technical Data Sheet**  
**Diamond ABS VP33 Black**  
**1402**



Acrylonitrile Butadiene Styrene  
 Engineering Plastics

**Product Description**

Diamond ABS VP-33 is a flame retardant (non-PBBE additives). Excellent moldability and good toughness. UL94 V-0 @ 1/16" (1.5mm).

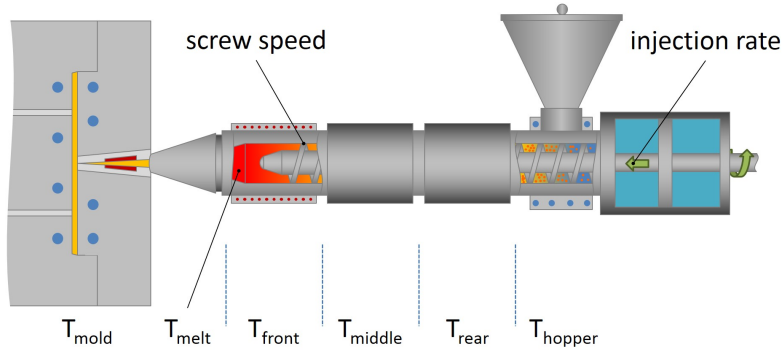
**General**

Additive	• Flame Retardant
Features	• Flame Retardant
Agency Ratings	• EU 2002/96/EC (WEEE)
RoHS Compliance	• RoHS Compliant
Forms	• Pellets
Processing Method	• Injection Molding

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density / Specific Gravity	1.15	1.15 g/cm <sup>3</sup>	ASTM D792
Melt Mass-Flow Rate (MFR) <sup>1</sup> (230°C/3.8 kg)	5.0 g/10 min	5.0 g/10 min	ASTM D1238
Molding Shrinkage - Flow (Injection Molded)	5.0E-3 to 7.0E-3 in/in	0.50 to 0.70 %	ASTM D955
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength			ASTM D638
Yield, Injection Molded <sup>2</sup>	6000 psi	41.4 MPa	
Break, 73°F (23°C), 0.125 in (3.18 mm), Injection Molded <sup>3</sup>	4900 psi	33.8 MPa	
Tensile Elongation <sup>3</sup>			ASTM D638
Yield, 73°F (23°C), 0.125 in (3.18 mm), Injection Molded	2.3 %	2.3 %	
Break, 73°F (23°C), 0.125 in (3.18 mm), Injection Molded	9.6 %	9.6 %	
Flexural Modulus - Tangent <sup>4</sup> (Injection Molded)	340000 psi	2340 MPa	ASTM D790A
Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Notched Izod Impact			ASTM D256A
73°F (23°C), 0.125 in (3.18 mm)	2.6 ft·lb/in	140 J/m	
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (R-Scale)	98	98	ASTM D785
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
264 psi (1.8 MPa), Unannealed, 0.125 in (3.18 mm), Injection Molded	160 °F	71.1 °C	ASTM D648A
264 psi (1.8 MPa), Annealed, 0.125 in (3.18 mm)	198 °F	92.2 °C	ASTM D648
Vicat Softening Temperature	200 °F	93.3 °C	ASTM D1525 <sup>5</sup>
RTI Elec (0.06 in (1.5 mm))	140 °F	60.0 °C	UL 746
RTI Imp (0.06 in (1.5 mm))	140 °F	60.0 °C	UL 746
RTI Str (0.06 in (1.5 mm))	140 °F	60.0 °C	UL 746
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating (0.06 in (1.5 mm), ALL)	V-0	V-0	UL 94

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Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	180 to 190 °F	82 to 88 °C
Drying Time	4.0 to 6.0 hr	4.0 to 6.0 hr
Suggested Max Moisture	0.10 %	0.10 %
Suggested Shot Size	50 to 70 %	50 to 70 %
Rear Temperature	340 to 360 °F	171 to 182 °C
Middle Temperature	380 to 400 °F	193 to 204 °C
Front Temperature	390 to 420 °F	199 to 216 °C
Nozzle Temperature	390 to 430 °F	199 to 221 °C
Processing (Melt) Temp	390 to 430 °F	199 to 221 °C
Mold Temperature	120 to 160 °F	49 to 71 °C
Injection Rate	Moderate-Fast	Moderate-Fast
Back Pressure	50.0 to 100 psi	0.345 to 0.689 MPa
Screw Speed	30 to 60 rpm	30 to 60 rpm
Vent Depth	1.5E-3 to 2.0E-3 in	0.038 to 0.051 mm

**Notes**

- <sup>1</sup> Procedure A
- <sup>2</sup> Type I, 2.0 in/min (51 mm/min)
- <sup>3</sup> Type I
- <sup>4</sup> Method I (3 point load), Type I, 0.050 in/min (1.3 mm/min)
- <sup>5</sup> Loading 1 (10 N)

**Notes**

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