Technical Data Sheet

Diamond AES 202 1806BLK

Acrylonitrile Ethylene Styrene

Product Description

Diamond AES 202 1806BLK is a Acrylonitrile Ethylene Styrene material and is typically used in Injection Molding applications. Features include: Good Stiffness, Good Weather Resistance, and Medium Impact Resistance.

Processing Method	Injection Molding
Attribute	Good Stiffness; Good Weather Resistance; Medium Impact Resistance
Forms	Pellets

Typical Properties	Nominal Value	Units	Test Method
Physical			
Melt Flow Rate			
(230 °C/3.8 kg)	8.6	g/10 min	ISO 1133
(230 °C/3.8 kg)	8.6	g/10 min	ASTM D1238
(220 °C/10.0 kg)	23	g/10 min	ISO 1133
(220 °C/10.0 kg)	23	g/10 min	ASTM D1238
Density, (23 °C)	1.09	g/cm³	ISO 1183
Density - Specific Gravity	1.09	g/cm³	ASTM D792
Mechanical			
Tensile Strength at Yield, (50 mm/min, 23 °C, Injection Molded, Flow)	50.4	MPa	ASTM D638
Tensile Stress at Yield, (23 °C, 50 mm/min, Injection Molded, Flow)	48.7	MPa	ISO 527-2
Flexural Modulus			
(23 °C, Injection Molded, Chord, Flow)	3010	MPa	ASTM D790
(23 °C, Injection Molded, Chord, Flow)	2980	MPa	ISO 178
Flexural Strength, (23 °C, Injection Molded)	72.5	MPa	ASTM D790
Impact			
Charpy Impact Strength - Notched			
(-30 °C, Injection Molded)	3.7	kJ/m²	ISO 179
(23 °C, Injection Molded)	9.8	kJ/m²	ISO 179
Notched Izod Impact Strength			
(-30 °C, Injection Molded)	3.9	kJ/m²	ISO 180
(23 °C, Injection Molded)	9.5	kJ/m²	ISO 180
Notched Izod Impact			
(-30 °C, Injection Molded, Flow)	41	J/m	ASTM D256
(23 °C, Injection Molded, Flow)	120	J/m	ASTM D256
Thermal			
Vicat Softening Temperature	99.8	°C	ISO 306

Deflection Temperature Under Load Unannealed (0.45 MPa)	90.1	°C	ISO 75-2/B
Deflection Temperature Under Load Unannealed (1.80 MPa)	77.8	°C	ISO 75-2/A
Deflection Temperature Under Load Unannealed (264 psi), (3.18 mm, Injection Molded)	78.0	°C	ASTM D648
Deflection Temperature Under Load Unannealed (66 psi), (3.18 mm, Injection Molded)	89.7	°C	ASTM D648
Coefficent of Linear Thermal Expansion (CLTE), Flow, (-30 to 80 °C)	7.9E-5	cm/cm/°C	ISO 11359-2
Coefficent of Linear Thermal Expansion (CLTE), Perpendicular, (-30 to 80 °C)	6.6E-5	cm/cm/°C	ISO 11359-2

Injection Parameters	Nominal Value	Units
Drying Time	2.0 to 4.0	hr
Drying Temperature	80 to 85	°C
Suggested Max Moisture	0.1	%
Nozzle Temperature	220 to 272	°C
Processing (Melt) Temp	220 to 272	°C
Front Temperature	235 to 272	°C
Suggested Shot Size	40 to 70	%
Middle Temperature	232 to 265	°C
Rear Temperature	230 to 260	°C
Injection Rate	Fast	
Back Pressure	0.517 to 1.03	MPa
Mold Temperature	40 to 80	°C