

Technical Data Sheet

Diamond ASA S170 1795 UVBLK



Acrylonitrile Styrene Acrylate

Product Description

Diamond ASA S170 1795 UVBLK is a Acrylonitrile Styrene Acrylate material and is typically used in Injection Molding applications. Features include: Good Weather Resistance, and High Impact Resistance.

Processing Method Injection Molding

Attribute Good Weather Resistance; High Impact Resistance

Forms Pellets

Typical Properties	Nominal Value	Units	Test Method
Physical			
Melt Flow Rate			
(230 °C/3.8 kg)	2.4	g/10 min	ASTM D1238
(230 °C/3.8 kg)	2.4	g/10 min	ISO 1133
(220 °C/10.0 kg)	12	g/10 min	ASTM D1238
(220 °C/10.0 kg)	12	g/10 min	ISO 1133
Density, (23 °C)	1.06	g/cm ³	ISO 1183
Density - Specific Gravity	1.06	g/cm ³	ASTM D792
Mechanical			
Tensile Strength at Yield, (50 mm/min, 23 °C, Injection Molded, Flow)	40.9	MPa	ASTM D638
Tensile Stress at Yield, (50 mm/min, Injection Molded, Flow)	39.8	MPa	ISO 527-2
Flexural Modulus			
(23 °C, Injection Molded, Chord, Flow)	2010	MPa	ASTM D790
(23 °C, Injection Molded, Chord, Flow)	2050	MPa	ISO 178
Impact			
Charpy Impact Strength - Notched			
(-30 °C, Injection Molded)	10	kJ/m ²	ISO 179
(23 °C, Injection Molded)	25	kJ/m ²	ISO 179
Notched Izod Impact Strength			
(-30 °C, Injection Molded)	8.3	kJ/m ²	ISO 180
(23 °C, Injection Molded)	31	kJ/m ²	ISO 180
Notched Izod Impact			
(-30 °C, Injection Molded, Flow)	130	J/m	ASTM D256
(23 °C, Injection Molded, Flow)	400	J/m	ASTM D256
Hardness			

Rockwell Hardness		
(R-Scale, 23 °C)	95	ISO 2039-2
(R-Scale, Injection Molded)	91	ASTM D785
Thermal		
Vicat Softening Temperature	102 °C	ISO 306
Deflection Temperature Under Load Unannealed (0.45 MPa)	88.5 °C	ISO 75-2/B
Deflection Temperature Under Load Unannealed (1.80 MPa)	75.3 °C	ISO 75-2/A
Deflection Temperature Under Load Unannealed (264 psi), (3.18 mm, Injection Molded)	75.7 °C	ASTM D648
Deflection Temperature Under Load Unannealed (66 psi), (3.18 mm, Injection Molded)	88.6 °C	ASTM D648
Coefficient of Linear Thermal Expansion (CLTE), Flow, (-30 to 80 °C)	8.4E-5 cm/cm/°C	ISO 11359-2
Coefficient of Linear Thermal Expansion (CLTE), Perpendicular, (-30 to 80 °C)	1.0E-4 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