

EMERGE™ PC/ABS 7710 SK Advanced Resin

Overview

EMERGE™ PC/ABS 7710 SK Advanced Resin is an ignition-resistant PC/ABS blend that contains no chlorinated or brominated flame retardant additives. This grade has been tested to ISO 10993 Parts 5 & 10 and is suitable for skin contact applications. It has superior processability for injection molding applications, excellent aesthetics and is available in custom colors.

Main Characteristics:

- Tested under ISO 10993 (Parts 5 & 10)
- RoHS Compliant

Applications:

- Medical equipment housings
- Consumer electronics
- Wearable devices

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density	1.17 g/cm ³	1.17 g/cm ³	ASTM D792 ISO 1183
Melt Mass-Flow Rate (MFR)			ASTM D1238 ISO 1133
230°C/3.8 kg	11 g/10 min	11 g/10 min	
240°C/5.0 kg	20 g/10 min	20 g/10 min	
260°C/2.16 kg	13 g/10 min	13 g/10 min	
Molding Shrinkage - Flow	4.0E-3 to 6.0E-3 in/in	0.40 to 0.60 %	ASTM D955 ISO 294-4
Mechanical	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Modulus			
-- ¹	380000 psi	2620 MPa	ASTM D638
--	363000 psi	2500 MPa	ISO 527-1/1
Tensile Strength			
Yield ²	8700 psi	60.0 MPa	ASTM D638
Yield	7980 psi	55.0 MPa	ISO 527-2/50
Break ²	7000 psi	48.3 MPa	ASTM D638
Break	6530 psi	45.0 MPa	ISO 527-2/50
Tensile Elongation			
Yield ²	3.8 %	3.8 %	ASTM D638
Yield	3.8 %	3.8 %	ISO 527-2/50
Break ²	65 %	65 %	ASTM D638
Break	43 %	43 %	ISO 527-2/50
Flexural Modulus	390000 psi	2690 MPa	ASTM D790
Flexural Strength	14000 psi	96.5 MPa	ASTM D790

Impact	Nominal Value (English)	Nominal Value (SI)	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F (-30°C)	7.1 ft-lb/in ²	15 kJ/m ²	
73°F (23°C)	19 ft-lb/in ²	40 kJ/m ²	
Notched Izod Impact			
0°F (-18°C)	3.7 ft-lb/in	200 J/m	ASTM D256
19°F (-7°C)	8.2 ft-lb/in	440 J/m	ASTM D256
73°F (23°C)	9.0 ft-lb/in	480 J/m	ASTM D256
-22°F (-30°C)	6.7 ft-lb/in ²	14 kJ/m ²	ISO 180/1A
73°F (23°C)	24 ft-lb/in ²	50 kJ/m ²	ISO 180/1A
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Rockwell Hardness (R-Scale)	120	120	ASTM D785
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Deflection Temperature Under Load			
66 psi (0.45 MPa), Unannealed	195 °F	90.6 °C	ASTM D648
66 psi (0.45 MPa), Unannealed	190 °F	88.0 °C	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	175 °F	79.4 °C	ASTM D648
264 psi (1.8 MPa), Unannealed	171 °F	77.0 °C	ISO 75-2/A
Vicat Softening Temperature			
--	220 °F	104 °C	ASTM D1525 ³
--	201 °F	94.0 °C	ISO 306/B50
--	219 °F	104 °C	ISO 306/A120
CLTE - Flow (-40 to 104°F (-40 to 40°C))	3.8E-5 in/in/°F	6.8E-5 cm/cm/°C	ASTM D696
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Surface Resistivity	5.2E+15 ohms	5.2E+15 ohms	IEC 60093
Volume Resistivity	1.0E+18 ohms-cm	1.0E+18 ohms-cm	IEC 60093
Electric Strength			IEC 60243-1
0.0630 in (1.60 mm), in Oil	660 V/mil	26 kV/mm	
0.126 in (3.20 mm), in Oil	460 V/mil	18 kV/mm	
Relative Permittivity			IEC 60250
100 Hz	2.86	2.86	
1 MHz	2.80	2.80	
Dissipation Factor			IEC 60250
100 Hz	4.0E-3	4.0E-3	
1 MHz	7.0E-3	7.0E-3	
Flammability	Nominal Value (English)	Nominal Value (SI)	Test Method
Flame Rating ⁴			UL 94
0.06 in (1.5 mm)	V-0	V-0	
0.08 in (2.0 mm)	5VB	5VB	
0.10 in (2.5 mm)	5VA	5VA	
Glow Wire Flammability Index ⁴			IEC 60695-2-12
0.06 in (1.5 mm)	1700 °F	925 °C	
0.08 in (2.0 mm)	1700 °F	925 °C	
0.10 in (2.5 mm)	1700 °F	925 °C	
0.12 in (3.0 mm)	1740 °F	950 °C	
Glow Wire Ignition Temperature ⁴			IEC 60695-2-13
0.06 in (1.5 mm)	1290 °F	700 °C	
0.08 in (2.0 mm)	1290 °F	700 °C	
0.12 in (3.0 mm)	1290 °F	700 °C	
Oxygen Index ⁴	28 %	28 %	ASTM D2863

Injection	Nominal Value (English)	Nominal Value (SI)
Drying Temperature	176 to 194 °F	80 to 90 °C
Drying Time	3.0 to 4.0 hr	3.0 to 4.0 hr
Processing (Melt) Temp	446 to 518 °F	230 to 270 °C
Mold Temperature	140 to 194 °F	60 to 90 °C