

PRE-ELEC[®] ESD 7100

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PRE-ELEC[®] ESD 7100 is a static dissipative thermoplastic compound based on ABS. The dissipative property is permanent and built into the polymer chain. PRE-ELEC[®] ESD 7100 has been developed for injection moulding and for the extrusion of thermoformable mono- or multi-layer sheet. The products made out of PRE-ELEC[®] ESD 7100 are washable, reusable and recyclable. Surface resistance values of 10^8 ohms (EOS/ESD S11.11-1993, IEC 61340-5-1) can be achieved with optimum processing parameters.

Typical applications include trays, tote bins, crates and technical parts which give permanent ESD protection for the electronics, medical, pharmaceutical and paper handling industries. PRE-ELEC[®] ESD 7100 can be coloured into various bright colours.

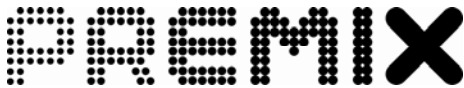
Appearance	granule
Colour	whitish
Moisture content	max. 0.15% when produced
Packaging	20 kg (44 lb) polyethylene valve bags, 1000 kg (2200 lb) on one way pallet, stretch wrapped or in 544 kg (1200 lb) octabin
Storage	can be stored one year in its original package. Packages should be stored indoors.
Processing	PRE-ELEC [®] ESD 7100 compound can be processed without modifications in the machines using normal processing conditions as with ABS. Pre-drying is necessary e.g. 3 - 4 hours at 70 - 80 °C (160 – 175 °F) in a dehumidifying drier.

Recommended processing parameters

Extrusion temperature	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6
Die	200 °C 390 °F	200 °C 390 °F	190 °C 370 °F	200 °C 390 °F	200 °C 390 °F	
Cylinder	180 °C 360 °F	190 °C 370 °F	200 °C 390 °F	200 °C 390 °F	200 °C 390 °F	200 °C 390 °F
Rolls	1 st 60 °C 140 °F	2 nd 60 °C 140 °F	3 rd 50 °C 120 °F			

Injection molding	Material temperature	190 - 210 °C (370- 410 °F)
	Mold temperature	30 - 70 °C (85 – 160 °F)
	Injection pressure	750 - 1200 bar (10900 -17400 psi)
	Post pressure	400 - 600 bar (5800 – 8700 psi)
	Injection speed	Moderate

These temperatures can be used for guidance purposes. They will also depend on the equipment used. The instructions of the equipment manufacturer should be followed.



PHYSICAL PROPERTIES

PRE-ELEC® ESD 7100

	ISO TEST METHOD	METRIC UNITS	VALUE	ASTM TEST METHOD	U.S. Conventional Units	VALUE
Specific gravity		g/cm ³	1.07			
Density					lb/in ³	0.039
Melt Flow Index	1133			D-1238		
200°C / 5.0 kg		g/10min	5			
200°C / 21.6 kg		g/10min	20			
Tensile strength ⁽²⁾	527	MPa	27	D-638	psi	3900
Yield strength ⁽²⁾	527	MPa	35	D-638	psi	5100
Elongation at break ⁽²⁾	527	%	28	D-638	%	28
Elongation at yield ⁽²⁾	527	%	6	D-638	%	6
Modulus of elasticity ⁽²⁾	178	MPa	1800	D-790	10 ³ psi	260
Impact strength, unnotched Izod ⁽²⁾	180			D-256		
4.0 mm (0.156-in) thickness, 23°C/73°F		kJ/m ²	68		ft-lb/in ²	33
4.0 mm (0.156-in) thickness, -20°C/-4°F		kJ/m ²	49		ft-lb/in ²	24
Impact strength, notched Izod ⁽²⁾	180			D-256		
4.0 mm (0.156-in) thickness, 23°C/73°F		kJ/m ²	12		ft-lb/in ²	10
4.0 mm (0.156-in) thickness, -20°C/-4°F		kJ/m ²	4		ft-lb/in ²	2
Vicat softening point ⁽²⁾	306/			D-1525		
Rate A	A50	°C	100		°F	212
Rate B	B50	°C			°F	
Deflection temperature ⁽²⁾	75/			D-648		
0.45 MPa (66 psi) - load	Method Bf	°C	88		°F	190
1.8 MPa (264 psi) - load	Method Af	°C			°F	
Surface resistance ⁽¹⁾	IEC 61340-5-1	Ω	<10¹⁰	EOS/ESD S11.11- 1993	Ω	<10¹⁰
Static Decay Rate ⁽¹⁾	IEC 61340-5-1	s	<2	FTMS- 101C	s	<2
Mould shrinkage ⁽²⁾	294-4	%	0.5-0.7	D-955	in/in	0.005- 0.007
Hardness ⁽¹⁾	868			D-2240		
Shore A			-			-
Shore D			73			73
Flammability	RD524			RD524		
1 mm			UL94: -	39 mils		UL94: -
3 mm			UL94: -	118 mils		UL94: -

⁽¹⁾ test specimen: 400µm (16 mils) thick sheet

⁽²⁾ test specimen: 4.0 mm (0.156 in) thick, 10.0 mm (0.391 in) wide moulded rod

The information in this data sheet represents typical values obtained by us and should not be regarded as a specification.

We condition that the product will be inspected and qualified by the customer for his process to meet the specific requirements set by application, processing equipment and end product.

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