

HYBTONITE® - ESD

HYBTONITE®-ESD electrically conductive epoxy System

ESD is a liquid epoxy system tailor-made for electrically conductive applications such as windmill lightning protection and anti-static floorings.

The system conductivity is based on carbon nanotubes (CNT) and perfect dispersion is guaranteed by the HYBTONITE®-technology.

HYBTONITE® ESD epoxy formulation comes with different grades depending on application.

Applications

Windmill industry lightning protection, anti-static floorings, semi-conductive glues etc.

TABLE 1: Process data

Before mixing	Mixing	Curing
Clear the surface from dust, grease and moisture.	Mix the resin with curing agent properly for minimum 1 – 2 min.	The product cures even at RT but higher temperature gives better cure and properties.
The higher the temperature of the object the better flow and wetting are achieved.	Let the air come out and settle for min 2 – 5 min. (Use vacuum if possible)	Recommended heat cure is 80 °C.
If possible preheat the resin component to 30 – 40 °C before use.		

Vertical surfaces in hand laminating :

The system can be thickened with 2 % HDK / Aerosil for laminating vertical surfaces. This helps especially against sagging/ draining. Also available as 2-K glue.

The system does not crystallize and has a long storage stability of at least 3 years when properly stored in closed containers.

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TABLE 2: The System

ESD resin medium viscosity		The Curing agent – part b – medium viscosity	
Resin Viscosity (20 °C)	1000 – 1500 mPa·s	Viscosity (20 °C)	1000 – 2000 mPa·s
Resin Viscosity (40 °C)	200 – 400 mPa·s	Resin Viscosity (40 °C)	200 – 500 mPa·s
Density	1,1 – 1,2 g/cm ³	Density	1 – 1,2 g/cm ³
Flash point	>100 °C	Flash point	>100 °C

TABLE 3: Mix System Technical Data

	Low Viscosity	Medium	High Viscosity
Mix ratio (By weight)	100:35	100:35	100:35
Mix Viscosity 25 °C, mPa·s	500	900	5000
Mix Viscosity 40 °C, mPa·s	200	300	900
Density, kg/l	1.15	1.15	1.15
Colour	Black		
Gel Time 25 °C (150 g)	30 min – 8 hours		
Cure time 80 °C	15 min – 2 hours		
Min Cure Temperature, °C	15		
Resistivity, Ωm	10 – 100		
Capacitance, nF/m	10 – 100		
Max Tg, °C	90		
Modulus, GPa	2.5	2.8	3.0
Elongation at break, %	13	12	11

Storage Data

The products can be stored at temperatures between 0 – 60 °C in closed containers in dry place protected from direct sunlight. Storage time is at least 3 years.

Sales Packages

Resin	1100 kg IBC	240 kg drum	20 kg cans
Curing agent	900 kg IBC	180 kg drum	18 kg cans

Available from our factory in Finland (EUROPE).

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