CHEMISTRY THAT MATTERS™

VALOX™ SHF4320 RESIN

FOR ELECTRIC VEHICLE HIGH VOLTAGE CONNECTORS, CHARGERS & SOLAR INFRASTRUCTURE

HIGH CTI, HIGH FLOW PBT, 10% GLASS FIBER REINFORCED

INDUSTRY CHALLENGE

- Newly emerging industries, such as electric vehicle (EV) require enhanced insulation with high CTI (Comparative Tracking Index) of >600V in their applications
- Other high-voltage applications, such as electrical connectors and solar module electrical components, have similar insulation criteria
- Design of parts and working conditions have a big influence on material selection
- Creepage distance, working voltage and pollution degree determine CTI requirement for the specific application
- Fast charging, higher voltage, design miniaturization - require materials with higher CTI

INDUSTRY REQUIREMENTS

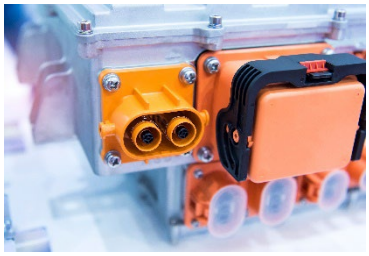
- Electrical Insulation, high voltage
- Faster cycle time
- Higher thermal performance
- Snap fit / hinge design possibilities

POTENTIAL APPLICATIONS

- High voltage connectors in EV
- DC fast charging cabinets
- EV charger couplers
- Power transmission system (grid)
- PV panel (DC high voltage system
- Fast charging in consumer electronics

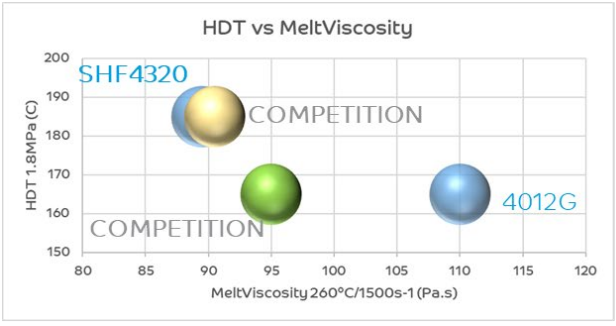
SABIC SOLUTION - VALUE PROPOSITION

- CTI 600V, both ASTM and IEC listed on UL-YC (File Number: E45329)
- MVR = 23 cm^3/10min (250°C/2.16kg)
- HDT > 180°C
- Elongation at break > 3%
- Heat stable orange color
- Laser markable



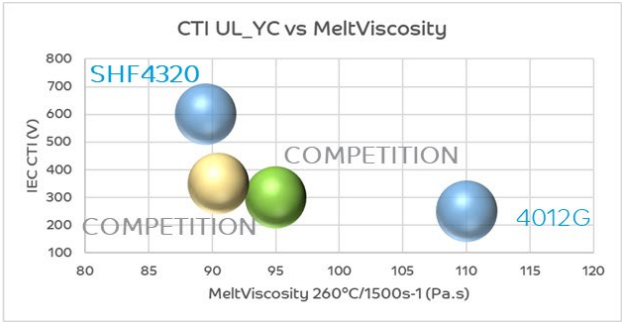


SABIC SOLUTION v COMPETITION
THERMAL RESISTANCE vs MATERIAL FLOW



SOURCE; SABIC

SABIC SOLUTION v COMPETITION
CTI vs MATERIAL FLOW



SOURCE; SABIC

CTI – COMPARATIVE TRACKING INDEX

CTI is used to classify solid electrical insulating materials and their resistance to the tracking phenomenon.
Two common standards divide the different materials in groups:

VALOX™ SHF4320 RESIN →

IEC 60112 Material Group	IEC 60112 Voltage range	ASTM D3638 PLC*	ASTM D3638 Voltage range	Tracking Resistance
I	600 ≤ CTI	0	600 ≤ CTI	High
II	400 ≤ CTI < 600	1	400 ≤ CTI < 600	
IIIa	175 ≤ CTI < 400	2	250 ≤ CTI < 400	
		3	175 ≤ CTI < 250	
IIIb	100 ≤ CTI < 175	4	100 ≤ CTI < 175	Low
		5	0 ≤ CTI < 100	

VALOX™SHF 4320 passed the IEC and ASTM industry standards – 600V in black, orange and natural colors

CONTACT US:

Please contact your local sales representaive and see here for more information

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