

New Grades of Crastin® for High-Voltage Electric and Hybrid-Electric Vehicle Connectors

Fully-color-compounded, UV laser-marking-enabled Crastin® grades meet requirements for high-voltage EV/HEV connector applications



The newly introduced Crastin® PBT polyester resins from DuPont are fully-color-compounded products that meet automotive OEM safety requirements to clearly indicate high-voltage components in orange for use in hybrid, plug-in, and battery (HV, PEV, BEV) electric vehicles.



Crastin® resins for EV/HEV connectors offer long-term reliability and strong mechanical properties

Crastin® FR684NH1 OR162 and Crastin® HR5330HFS OR516 both offer best-in-class Comparative Tracking Index (CTI) performance of 600V for these demanding parts. They also provide increased productivity and long-term reliability.

Crastin® FR684NH1 OR162 – 25% glass-reinforced, flame-retardant, non-halogenated, high-flow PBT in laser markable orange – benefits include:

- **Long-term reliability** – component and orange color stability at elevated temperatures
- **Increased safety** – stable dielectric strength over temperature and meets UL-94 V0 flame-retardance standard
- **Miniaturization** – enabled by maximum CTI (600V)
- **Complex shapes** – high-flow capability allowing thinner walls, design flexibility, and size reduction (miniaturization)
- **Design flexibility** – demonstrates high elongation at break and good balance of mechanical properties
- **Increased productivity** of fully-compounded orange components made possible by robust processing with minimum outgassing and corrosion through wider processing window versus competitive non-halogenated, flame-retardant PBT resins
- **Easy part traceability** – UV laser marking (355nm)

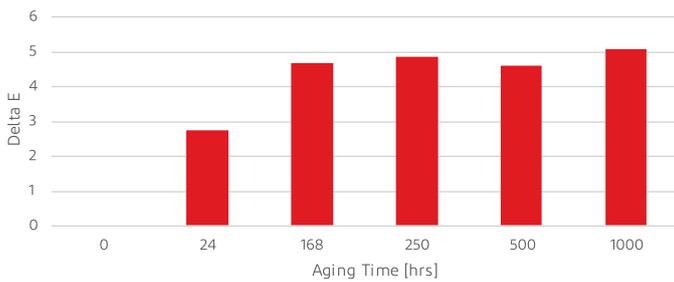
Crastin® FR684NH1 OR162 / BK591 / NC010 Property

Property	Method	Crastin® FR684NH1 OR162	Crastin® FR684NH1 BK591	Crastin® FR684NH1 NC010
Density	ISO 1183	1520kg/m ³	1520kg/m ³	1520kg/m ³
Comparative Tracking Index	IEC 60112	600 V	600 V	600 V
Tensile Modulus	ISO 527	9500 Mpa	9200 Mpa	9400 Mpa
Stress at Break	ISO 527	96 MPa	91 MPa	95 MPa
Strain at Break	ISO 527	2.5%	2.3%	2.5%
Impact Notched Charpy	ISO 179	7.4 KJ/m ²	7 KJ/m ²	7.5 KJ/m ²
Burning Behavior Thickness Tested	IEC6095	V0 0.75mm	V0 0.8mm	V0 0.8mm
Humidity Absorption, 2mm	ISO 62	0.1%	0.1%	0.1%
Water Absorption, 2mm	ISO 62	0.25%	0.25%	0.25%

Source: DuPont Lab

Crastin® FR684NH1 OR162 - Color stability at 140°C (dry)

Color Data: Thermal aging at 140°C Crastin® FR684NH OR162



Less color change even after heat aging at 140°C for 1,000 hrs

Source: DuPont Lab

Crastin® HR5330HFS OR516 – 30% glass-reinforced, hydrolysis-resistant, high-flow PBT in laser-markable orange – benefits include:

- **Long-term reliability** – component and orange color stability at elevated temperatures
- **Performance in harsh environments** enabled by best-in-class hydrolysis resistance (HR)
- **Increased safety** – exhibits stable dielectric strength over temperature
- **Miniaturization and design flexibility** – due to maximum CTI (600V) and high flow
- **Increased productivity** of fully-compounded orange components made possible by robust processing with wider processing window and minimum outgassing versus competitive PBT HR resins, and best-in-class melt stability suitable for hot runner systems
- **Easy part traceability** – UV laser marking (355nm)

Broad product portfolio for EV connector applications

The DuPont product portfolio includes materials for numerous EV connector applications:

Terminal Connectors

- Zytel® HTN51G35EF
- Zytel® HTN51G35HSL

Motor Connectors

- Zytel® HTN51G35EF

Power Cable Connectors

- Zytel® HTN51G35EF
- Crastin® HR5330HFS
- Crastin® HR5315HFS

EV Connectors

- Crastin® FR684NH1
- Crastin® T843FR
- Crastin® SK695FR
- Zytel® FR50

Battery Connectors

- Zytel® HTNFR42G30NH
- Zytel® HTNFR52G30NH
- Zytel® FR50

Charger housing

- Zytel® FR50
- Zytel® 80G33L

High Temp / Flex Coating

- Vamac® Grades

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