

DuPont Orange Materials for High Reliability in High-voltage EV and HEV Applications



The automotive industry faces a critical innovation challenge as EVs evolve: developing high-voltage components that are reliable and durable. To meet this need, DuPont introduces new DuPont™ Zytel® and DuPont™ Crastin® materials in stable orange that provide high performance and safety.

The safety of EV drivetrains demands plastic solutions that are reliable in high-voltage applications and durable for the long run. Zytel® and Crastin® orange materials are ideal for high-voltage terminals and connectors, busbars, and high-voltage switches and relays.

Orange Portfolio Features by Grade

Grade	Details	Enhanced hydrolysis resistance vs other grades	FR	CTI
CRAFR682NH1 OR162	PBT-GF15 FR(40) – Similar to Pantone 1505C / RAL2008		V-0 at 0.8 mm	600 V
CRAFR684NH1 OR162	PBT-GF25 FR(40) – Similar to Pantone 1505C / RAL2008		V-0 at 0.4 mm	600 V
CRAFR684NH1 OR168	PBT-GF25 FR(40) – Similar to RAL2003		V-0 at 0.4 mm	600 V
CRAFR685NH1 OR162	PBT-GF30 FR(40) – Similar to Pantone 1505C / RAL2008		V-0 at 0.4 mm	600 V
CRAFRHR5325NH OR162	PBT-GF25 FR(40) – Similar to Pantone 1505C / RAL2008	✓	V-0 at 0.4 mm	600 V
CRAHR5330HFS OR516	PBT-I-GF30 – Similar to RAL2003	✓	HB	600 V
ZYTFR70G30V0NH1 OR169	PA66-GF30 FR(40) – Similar to RAL2003	✓	V-0 at 0.8 mm	600 V

Source: DuPont

Crastin® PBT Solutions

Orange Crastin® PBT is available in multiple grades, including hydrolysis-resistant and flame-retardant/non-halogenated versions. Crastin® PBT provides excellent color stability above 140°C and electrical properties up to 160°C.

The Zytel® PA66 Solution

Orange Zytel® PA66 is a flame-retardant, non-halogenated material that delivers good color stability up to 130°C. It is the manufacturers' material of choice due to its impact strength and high elongation at break. Zytel® PA66 is ideal for busbars and large terminals subject to high thermal shocks.

Crastin® FR684NH1 OR168 – Similar to RAL 2003

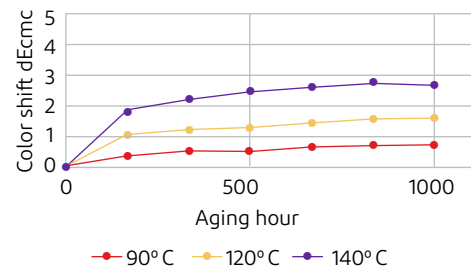


- No obvious color shift after heat aging under 90° / 120° / 140° C
- dEcmc = 0.7 after 90° C 1000 hour heat aging
- dEcmc = 1.5 after 120° C 1000 hour heat aging
- dEcmc = 2.7 after 140° C 1000 hour heat aging

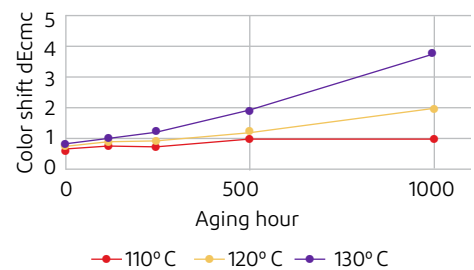
Zytel® FR70G30V0NH1 OR169 – Similar to RAL 2003



- No obvious color shift after heat aging under 110° / 120° / 130° C
- dEcmc = 1.08 after 110° C 1000 hour heat aging
- dEcmc = 1.97 after 120° C 1000 hour heat aging
- dEcmc = 3.62 after 130° C 1000 hour heat aging

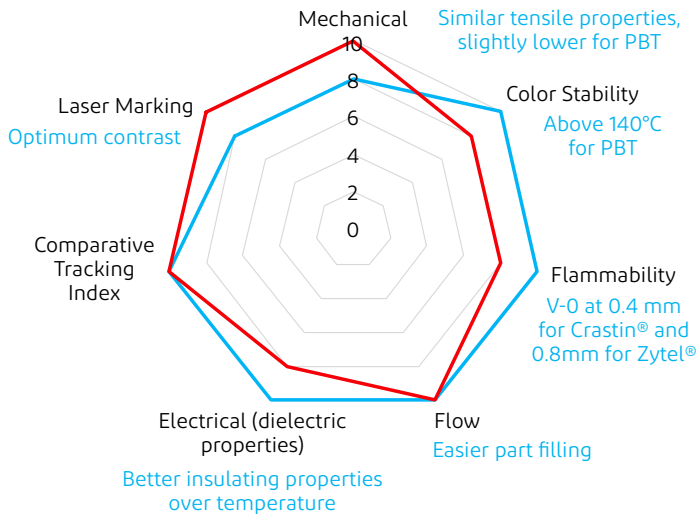


Source: DuPont



Source: DuPont

— Crastin® FR684NH1 — Zytel® FR70G30V0NH1



Source: DuPont

Cost-Effective, High Performance Materials

Orange Crastin® and Zytel® products comply with OEM specifications. Designers and engineers rely on this family of innovative plastics for:

- stable orange color at elevated temperatures
- hydrolysis-resistance, high mechanical properties, and resistance to thermal shock for extended component life
- a maximum tracking index (600V) and high flow for miniaturization and design flexibility
- high dielectric strength over temperature for increased safety
- fully-compounded orange materials with minimum outgassing and corrosion as well as a wide processing window
- laser marking capability for easy part traceability

For more information, contact your DuPont representative.

dupont.com/mobility



DuPont™, the DuPont Oval Logo, and all trademarks and service marks denoted with ™, SM or ® are owned by affiliates of DuPont de Nemours, Inc. unless otherwise noted. © 2020 DuPont.

The information set forth herein is furnished free of charge and is based on technical data that DuPont believes to be reliable and falls within the normal range of properties. It is intended for use by persons having technical skill, at their own discretion and risk. This data should not be used to establish specification limits nor used alone as the basis of design. Handling precaution information is given with the understanding that those using it will satisfy themselves that their particular conditions of use present no health or safety hazards. Since conditions of product use and disposal are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information. As with any product, evaluation under end-use conditions prior to specification is essential. Nothing herein is to be taken as a license to operate or a recommendation to infringe on patents.