



» APPLICATION BULLETIN

Colorants & Additives for Electrical & Electronic Applications

IEC 60695-2, known as the **Glow Wire** test, and **UL94** are established standards in the Electrical & Electronics industry that ensure plastic parts in electrical and electronic components have been tested for fire resistance in support of safer consumer products.

Avient offers **UL94 compliant masterbatches** and **flame retardant solutions** which meet the latest UL94 and Glow Wire fire standards, while also considering technical requirements, coloration options and cost efficiency. A team of experts provides guidance on the masterbatch solution most relevant to the final article, whether it is a light switch, plug, socket, electrical appliance, electronic/electrical connector or electric vehicle charger. All masterbatches are formulated for easy processing on standard dosing systems.

RENOL™ UL94 compliant colorants

- More than 2,000 recognized masterbatches available worldwide in all color options
- HB rating for most of PP, PS, ABS, PC/ABS, PBT, PA, PA-GF, TPU generic resins
- V-0, V-1, V-2 and 5VA/5VB ratings for more than 200 specific engineering resins

- Master file of recognized masterbatches with scope of use accessible in the UL product finder
- Development of custom products for specific resins upon request
- Compliance Letters available for REACH and RoHS

CESA™ Flam Glow Wire additives and color/additive combinations

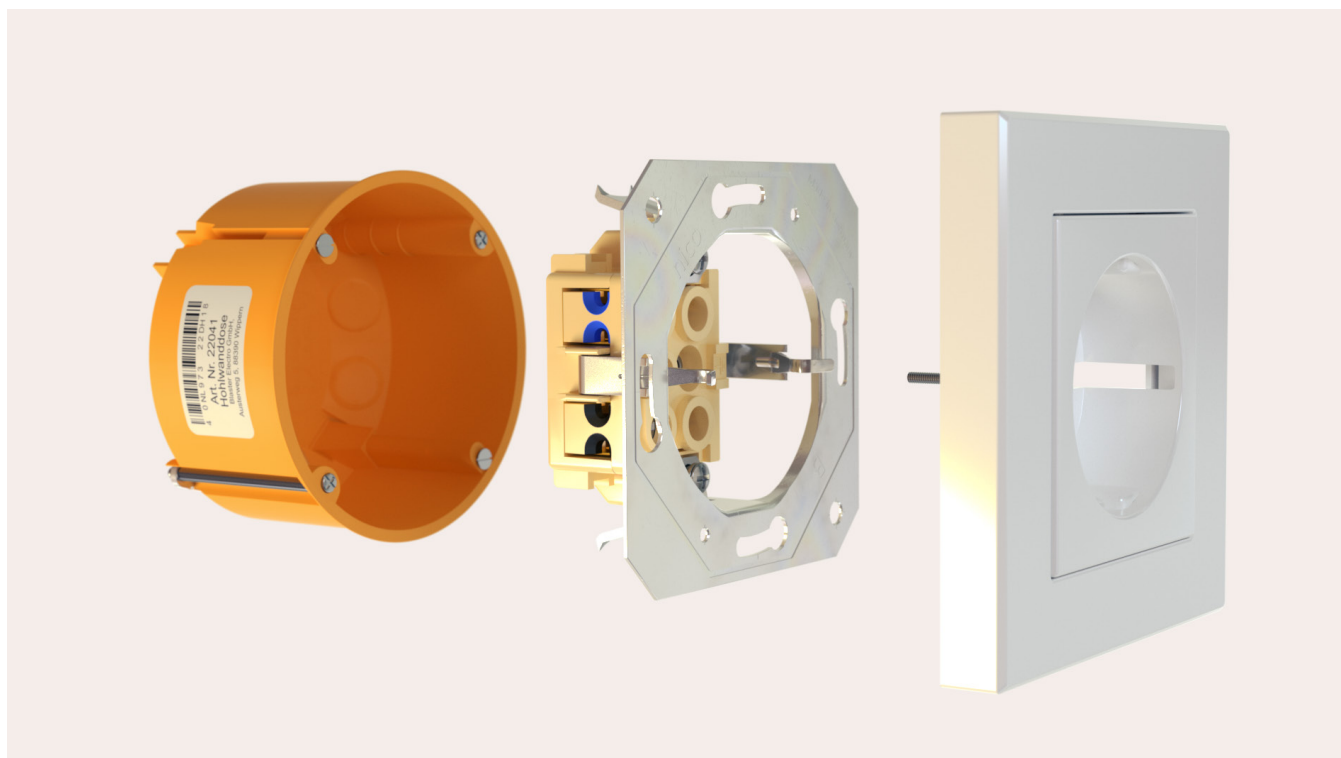
- Fire performance in line with different levels of Glow Wire temperatures (IEC 60695-2-12)
- Let-Down Ratio adjustable to reach different levels of Glow Wire temperatures
- Halogen-free (according to IEC 61249-2-21) and non-HBCD* solutions
- Wide range of solutions adapted to different polymers (PP, PS, PC)
- Colors and flame retardants can be combined in one product
- Compliance Letters available for REACH and RoHS

TYPICAL GLOW WIRE FLAMMABILITY INDICES (GWFI) ACHIEVED WITH CESA FLAM:

APPLICATION POLYMER	GWFI TEMPERATURE	TYPICAL LET-DOWN RATIO	CONTENT
HIPS	750–960°C	5–10%	Non-HBCD flame retardant*
PC	850–960°C	2–4%	Halogen-free according to IEC 61249-2-21
PP homopolymer	850–960°C	4%	Halogen-free according to IEC 61249-2-21
PP copolymer	850–960°C	4–8%	Antioxidant - metal deactivator

Other additives are available on request to fulfill specific requirements such as UV stabilization, laser marking or other functions. Our representatives can suggest the most suitable standard or custom solution.

* HBCD-free means that Hexabromocyclododecane (HBCD) is neither used as starting material during the mixing phase of our products nor intentionally added during production, but it cannot be excluded that it is not present at level of ubiquitous traces in any of the raw materials used in manufacturing of our products. In this regard “ubiquitous” means that this substance is omnipresent and its occurrence cannot be avoided by any technical, physical or chemical measure. Therefore, no specific analysis in order to detect the presence of HBCD is being carried out.



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