



» APPLICATION BULLETIN

Colorants & Additives for Electrical & Electronic Applications

IEC 60695-2, known as the **Glow Wire** test, and **UL 94** 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 **UL 94 compliant concentrates** and **flame retardant solutions** which meet the latest UL 94 and Glow Wire fire standards, while also considering technical requirements, coloration options and cost efficiency. A team of experts provides guidance on the concentrate 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 concentrates are formulated for easy processing on standard dosing systems.

OnColor™ UL 94 Colorants*

- More than 2,000 recognized concentrates 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 concentrates 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™ Flame Retardant Additives for Glow Wire

- 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
- Non-halogen (in accordance with IEC 61249-2-21) and non-HBCD** solutions
- Wide range of solutions adapted to different polymers (PP, PS, PC)
- Color and flame retardants can be combined in one product
- Compliance Letters available for REACH and RoHS

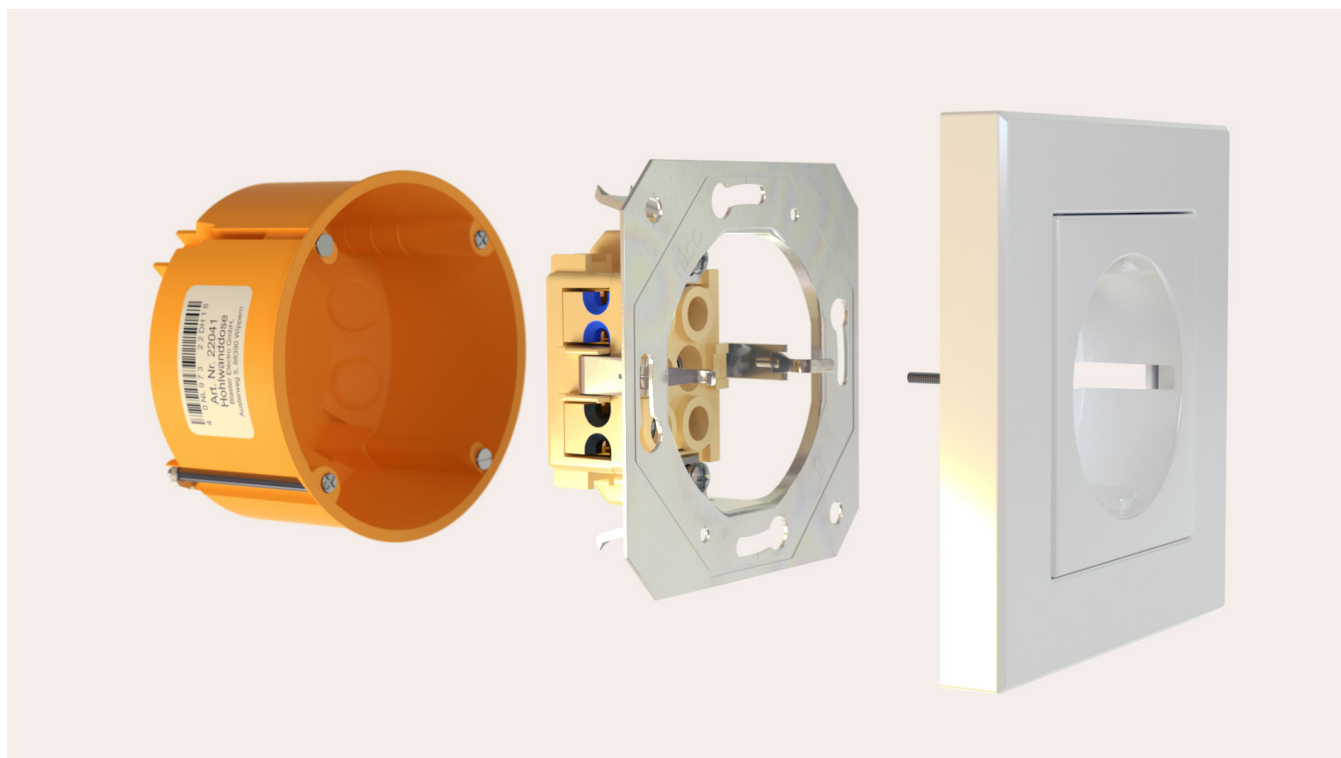
* Solutions also sold as Renol™ UL 94 Colorants

TYPICAL GLOW WIRE FLAMMABILITY INDICES (GWFI) ACHIEVED WITH CESA FLAME RETARDANT ADDITIVES

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%	Non-halogen in accordance with IEC 61249-2-21
PP homopolymer	850–960°C	4%	Non-halogen in accordance with 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.

** Non-HBCD 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.



1.844.4AVIENT
www.avient.com



Copyright © 2022, Avient Corporation. Avient makes no representations, guarantees, or warranties of any kind with respect to the information contained in this document about its accuracy, suitability for particular applications, or the results obtained or obtainable using the information. Some of the information arises from laboratory work with small-scale equipment which may not provide a reliable indication of performance or properties obtained or obtainable on larger-scale equipment. Values reported as “typical” or stated without a range do not state minimum or maximum properties; consult your sales representative for property ranges and min/max specifications. Processing conditions can cause material properties to shift from the values stated in the information. Avient makes no warranties or guarantees respecting suitability of either Avient’s products or the information for your process or end-use application. You have the responsibility to conduct full-scale end-product performance testing to determine suitability in your application, and you assume all risk and liability arising from your use of the information and/or use or handling of any product. AVIENT MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, either with respect to the information or products reflected by the information. This literature shall NOT operate as permission, recommendation, or inducement to practice any patented invention without permission of the patent owner.