

# News Release

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## BASF Engineering Plastics Meet EN 45545 Railway Standard

- **Certified solutions within the Ultramid® and Ultradur® portfolio for safety-critical E&E applications in the railway industry**
- **Flame retardancy based on halogen-free alternatives and high design freedom support standards-compliant E&E components**

Safety, fire protection, and reliability are key requirements in the railway industry - especially for electrical and electronic components. Numerous BASF Engineering Plastics grades meet the European railway standard EN 45545 and are certified accordingly. This enables manufacturers to reliably fulfill the stringent fire safety requirements in rail vehicle construction.

The EN 45545 standard aims to minimize the likelihood of fire ignition, slow down flame spread in the event of a fire, and limit the emission of smoke and toxic gases. This ensures that passengers and personnel have sufficient time to safely evacuate the vehicle even in extreme situations. Depending on the area of use and the specific application, different Hazard Levels (HL) are defined. BASF engineering plastics are qualified for relevant application groups such as R22, R24, R25, and R34.

The focus of BASF plastic solutions tested according to EN 45545 is clearly on applications for electrical and electronic components. Specially developed flame-retardant systems of classes FR30, FR40, and FR72 - particularly relevant for the railway sector - are used, for example. The flame retardant system employed is based, among other components, on nitrogen/phosphorus systems providing

intumescent flame retardancy, as well as magnesium hydroxide, thereby avoiding the use of halogen-based flame retardants. These flame retardants without intentional addition of chlorine and bromine also minimize the potential risk of secondary damage caused by corrosive smoke gases.

Another advantage for processors and OEMs is that EN 45545 certification is color-independent. Once a material is certified, all color variants can be used without requiring additional approval. Different wall thicknesses are covered in the tests by defined minimum and maximum thicknesses, providing additional design freedom.

Currently, EN 45545 classification reports are available for numerous Ultramid® and Ultradur® grades from BASF. Depending on the required Hazard Level (HL 1 to HL 3), the area of use, and the application category (R1 to R26), the following grades meet the requirements of the European railway standard:

- Ultramid® A3UG5
- Ultramid® A3U40G5
- Ultramid® A3U42G6
- Ultramid® A3U32
- Ultramid® T6340G6
- Ultramid® B3UG4
- Ultramid® B3UGM210
- Ultramid® KR4450 GY
- Ultramid® B3U50G6
- Ultramid® C3U
- Ultramid® TKR4340G6
- Ultramid® Advanced N3U41G6
- Ultramid® Advanced N4U41
- Ultramid® Advanced T2340G6
- Ultradur® B4450G5
- Ultradur® B4441G5

With this broad portfolio, BASF supports rail vehicle manufacturers and system suppliers in implementing safe, high-performance, and standards-compliant plastic solutions for demanding railway applications.

**About BASF**

At BASF, we create chemistry for a sustainable future. Our ambition: We want to be the preferred chemical company to enable our customers' green transformation. We combine economic success with environmental protection and social responsibility. Around 108,000 employees in the BASF Group contribute to the success of our customers in nearly all sectors and almost every country in the world. Our portfolio comprises, as core businesses, the segments Chemicals, Materials, Industrial Solutions, and Nutrition & Care; our standalone businesses are bundled in the segments Surface Technologies and Agricultural Solutions. BASF generated sales of around €60 billion in 2025. BASF shares are traded on the stock exchange in Frankfurt (BAS) and as American Depositary Receipts (BASFY) in the United States. Further information at [www.basf.com](http://www.basf.com).

**About BASF's Performance Materials division**

BASF's Performance Materials division drives the transformation of the plastics industry by uniting sustainability with high performance. Our materials expertise, deep industry know-how, and broad product portfolio make us the preferred partner for comprehensive solutions across the plastics lifecycle. With dedicated material-focused teams, strong R&D power, and a global production network close to our customers, we deliver tailored offerings that meet regional and industry-specific needs. Our products enhance performance and efficiency in key sectors such as automotive, construction, consumer goods, and industrial applications. Together with our partners, we embark on #OurPlasticsJourney towards a more circular and sustainable future. In 2025, the Performance Materials division achieved global sales of €6.4 billion.

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