Statement

Flame resistance of Ultrafuse® PC/ABS FR Black

Date / Revised: December 16, 2022

Version No.: 1.1

Dear Valued Customer,

This letter responds to your request to provide specific information regarding the flame resistance properties of our Ultrafuse® PC/ABS FR Black filament.

We have therefore regrouped the following information to support our response:

- **Conform the European railway standard for fire safety EN45545-2:2016, R26 (EL 10**), the DIN EN 60695-11-10:2014 (equivalent to UL94:2018) was performed on Ultrafuse® PC/ABS FR Black 3D printed test specimen. The test result was **V-0** for the specimen of nominal thickness 1.5 and 3 mm subjected to vertical flammability test. This result provides evidence for conformity with EN45545-2:2016, **R26 for HL1, HL2 and HL3.** The accreditation by DAkkS is presented on the next page.
- **In reference to the UL94 Standard for Safety of Flammability of Plastic Materials for Parts in Devices and Appliances testing** our Ultrafuse® PC/ABS FR Black material is tested in 3D printed specimens complying and fulfilling the requirements in reference to **the UL94 V-0** standard with a wall thicknesses of 1.5 and 3 mm. Meaning, that it is classified as self-extinguishing.
- **Glow wire on end product test (GWEPT)** is performed on 3D printed specimens per **IEC 60695-2-11**. The glow wire testing is an electrical safety test designed to evaluate the flame resistant properties of plastic materials used in electrical devices. Based on our Glow Wire Test, the worst case "ZX / upright direction" 3D printed specimens from Ultrafuse® PC/ABS FR Black passed the GWEPT without dripping at **750 °C** when testing a specimen with a wall thickness of 1.5 mm and the **960 °C** with a wall thickness of 3 mm.

Further information can be accessed on our ForwardAM website. Specific technical information regarding the Ultrafuse® PC/ABS FR Black filament is available by utilizing the QR-code or clicking on the following link; click here.

F o r n o t i c e:
We give no warranties, expressed or implied, concerning the suitability of above-mentioned product for use in any device and applications.

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TEST REPORT according to ISO/IEC 17025 No. AVS: 2006115 Date: 2021-11-15 File: 2006115_V_EN.DOCX	DAkkS Deutsche Akkreditierungsstelle D-PL-14121-04-00
Testing laboratory BASF SE RBU Performance Materials Europe Materials and Parts Testing PMD/EX-H201 67056 Ludwigshafen Deutschland	**Contact at laboratory**
Client Company: BASF 3D Printing Solutions GmbH Speyerer Strasse 4 69115 Heidelberg Germany	**Contact at client**
Test specimen / Material A2020-2248 PC-ABS (FR) black	**Test methods (Standard and publication date)** - IEC 60695-11-10:2014 vertical (equivalent to UL94:2020)
Order received on: 2021-01-04 Specimen received on: 2021-01-04 Tests conducted on: 2021-01-12	

Decision rule
EN45545-2:2016, R26 (EL 10): HL1-3 (V0)

Result
Test specimen of nominal thickness 1.5 and 3 mm were subjected to vertical flammability testing according to DIN EN 60695-11-10:2014 (equivalent to UL94:2018). The test result is V-0. This result provides evidence for conformity with EN45545-2:2016, R26 for HL1, HL2 and HL3.

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