

# Statement

# Flame resistance of Ultrafuse® PC GF30

Date / Revised: June 10, 2022

Version No.: 1.0

Dear Valued Customer,

This letter responds to your request to provide specific information regarding the flame resistance properties of our Ultrafuse® PC GF30 filament.

The Ultrafuse® PC GF30 filament is one of the few commercial filaments that **meets the EN 45545-2** standard. The EN 45545-2 is the sole standard for material fire behavior (toxicity, smoke density and oxygen-depletion), now adopted by all EU nations.

This letter confirms that Ignition Resistance of Ultrafuse® PC GF30 was tested according to classification standard DIN EN 45545-2:2016-02 Railway applications – Fire protection of railway vehicles - Part 2: Requirements for fire behavior of materials and components. The Ultrafuse® PC GF30 filament is processed as end use application in an upright build orientation by utilizing Additive Manufacturing.

Product group / field of application: Interior covering train  
 Tested sample thickness: 1.5 mm to 3mm  
 Tested sample colour: natural black

Classification results:

Ultrafuse® PC GF30 meets the following requirements:

Requirement set	Hazard level
R22, R23 R24, R26	HL1, HL2, HL3

According to DIN EN 60695-11-10:2014 (equivalent to UL94:2018 Standard for Safety of Flammability of Plastic Materials for Parts in Devices and Appliances testing) our Ultrafuse® PC GF30 material is tested as 3D printed specimens which **comply and fulfill** the requirements in reference to **the UL94 V-0** standard with a nominal wall thickness of 1.5- and 3-mm. Meaning, that it is classified as self-extinguishing.

The accreditations by DAkKS are presented on the following pages.

Further information can be accessed on our [ForwardAM](#) website. Specific technical information regarding the Ultrafuse® PC GF30 filament is available by utilizing the QR-code or clicking on the following link; [click here](#).



**Disclaimer:**


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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Formblatt MA4.5\_F003, Revision: 3.4, gültig ab: 05.01.2021

<b>TEST REPORT according to ISO/IEC 17025</b> No. AVS: 2102191 Date: 2022-05-09 File: 2006115B_V_EN	 Deutsche Akkreditierungsstelle D-PL-14121-04-00
<b>Testing laboratory</b> BASF SE RBU Performance Materials Europe Materials and Parts Testing PMD/EX-H201 67056 Ludwigshafen Deutschland	<b>Contact at laboratory</b>
<b>Client</b> Company: BASF 3D Printing Solutions GmbH Speyerer Strasse 4 69115 Heidelberg Germany	<b>Contact at client</b>
<b>Test specimen / Material</b> A2021-2560 Ultrafuse PC GF30 black	<b>Test methods (Standard and publication date)</b> - IEC 60695-11-10:2014 vertical (equivalent to UL94:2020)
Order received on: 2021-04-09 Specimen received on: 2021-04-12 Tests conducted on: 2021-04-20	

### 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.

The test results of this report are only valid for the specimens tested and only describe the results achieved by the application of the particular tests methods to these specimens. They do not imply any guarantee nor any agreement on a contractual quality or a suitability of the product for a specific purpose. In view of the many factors that may affect processing and application of the product, the test results do not relieve processor from carrying out own investigations and tests. The report does not imply any recommendation for a product. The report shall only be reproduced and passed on in full.

The testing laboratory is accredited by DAkkS Deutsche Akkreditierungsstelle GmbH (German Accreditation Body) according to ISO 17025 for mechanical, thermal, physical-chemical and flammability tests. The accreditation is valid only for the scope of accreditation listed in the Annex to the accreditation certificate (Registration No. D-PL-14121-04-00).

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## BASF – Fire Safety Technology

**Classification report according to DIN EN 45545 Part 2 : 2016-02  
 Railway applications - Fire protection of railway vehicles - Part 2: Requirements for fire behaviour of  
 materials and components**

Classification Report No.: 14781 / 54278 Rev. 1

Receipt of order: 03.02.2022

**1. Material:** (information supplied by client)

Ultrafuse PC GF30  
 Order number: ATLaS-2021-3296 + 3335

Colour:

End use application: interior covering train

**2. Summary of results and classification:**

Standard: DIN EN 45545-2:2016-02		Set of requirements: R22 / R23 / R24			
14781 / 54267	EN ISO 4589-2	LOI	≥ 32,0	[% O2]	HL3
14781 / 54265 Thickness: 1,5 mm	EN ISO 5659-2 25 kW/m <sup>2</sup> (pilot flame)	Ds (max)	19		HL3
14781 / 54290 Thickness: 3 mm	EN ISO 5659-2 25 kW/m <sup>2</sup> (pilot flame)	Ds (max)	89		HL3
14781 / 54266	NF X 70-100-1/-2 600 °C	CIT (NLP)	0,20		HL3
<b>Final classification:</b>		<b>HL3</b>			

**Remarks:**

Valid for thickness range from 1,5 mm to 3 mm  
 Corrected version of report 14781/54278 dated of 02.03.2022.

**Any conclusions we draw about the fire safety of the materials we test are based exclusively on the results of the test under the conditions described. The extent to which such conclusions can be applied to non-tested material under non-standard conditions is the sole responsibility of the customer and is done so at his own risk. - Decision rule acc. to DIN EN ISO/IEC 17025: Wherever statements of conformity are made, no measurement uncertainty is taken into account.**

BASF-Fire Safety Technology

Ludwigshafen, 07.04.2022