

Plastics for Additive Manufacturing
Guide Information

Process Category: (AM Process Technology) E000000

Company Name
1000 Additive Lane, City, State, Country

Grade ABC
Material Generic Type (Chemical Abbreviation), furnished form (Pellets, Powder, Liquid, etc.) for use with (AM Process Technology)

Color	Min. Thk (mm)	Flame Class	HVI	HAI	RTI Elec	RTI Imp	RTI Str
NC	1.5	HB	0	0	50	50	50
	3.0	V-0	0	0	50	50	50

Comparative Tracking Index (CTI): 0
Dielectric Strength (kV/mm): 10
High-Voltage Arc Tracking Rate (HVTR): 0
Dimensional Change (%): 1.0

Inclined Plane Tracking (IPT) kV: 60 min at 1 kV
Volume Resistivity (10⁸ ohm-cm): 14
Surface Resistivity (10⁸ ohms/square): 13
High Volt, Low Current Arc Resis (D495): 5

UL RoHS 2011/65/EU & 2015/863 Compliant Material (color: NC) [view certificate](#)
UL 746H Non-Halogenated Material (color: NC)

(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure, and Immersion in accordance with UL 746C.
(f3) - Suitable for use with respect to exposure to detergent, in accordance with UL 749.
(f4) - Suitable for use with respect to exposure to detergent, in accordance with UL 2157.
Grade ABC contains an average of 30% post-consumer recycled content [view SPOT@ certificate](#)

Printing Process Designation Number:
Layer Thickness (mm): 0.05

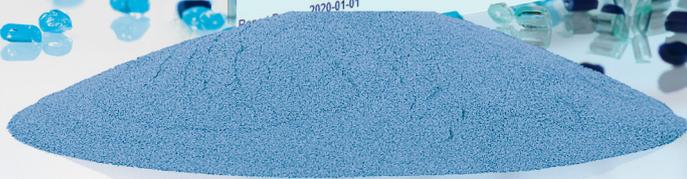
Processing Parameters
Build Plane: Horizontal & Vertical

Post Processing Method: Any Required Post Processing
For use with printer: Printer Make and Model Number

Limited properties and ratings assigned to samples produced by the Additive Manufacturing technique representing a specific set of printing parameters and build strategy. Other print parameters and build strategies may result in significantly different results.

IECIS0 small-scale test data does not pertain to building materials, furnishings and related contents. IECIS0 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

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Certified Plastics for Additive Manufacturing Program

The UL Solutions Blue Card - Safety and performance of plastics for 3D printing.



Safety. Science. Transformation.™

Trusted UL Solutions Plastics Certification Programs verify the safety and integrity of your materials

3D printing, or Additive Manufacturing (AM), is a fast-growing segment of the plastics market. UL Solutions helps manufacturers navigate and win in the challenging AM space and bring their innovative products to market.

The Certified Plastics for Additive Manufacturing Program offers solutions for safety and compliance for the growing needs of this exciting new business area.

That's where the UL Solutions Blue Card comes into play – as a safety and performance guarantee, and a low-maintenance marketing tool.

Certified Plastics for Additive Manufacturing Program (Blue Card Program)

Unlike traditional manufacturing such as injection molding, the 3D printing process introduces a variability which can significantly impact material properties based on how test specimens are printed.

Serving as an extension of the Plastics Recognition Program (Yellow Card Program), the Certified Plastics for Additive Manufacturing Program (Blue Card Program) defines the additional requirements necessary to recognize plastics intended for 3D printing and 3D printed components and products. The Blue Card, a digital product information card, presents the data necessary to prove the safety and integrity of materials intended for 3D printing.

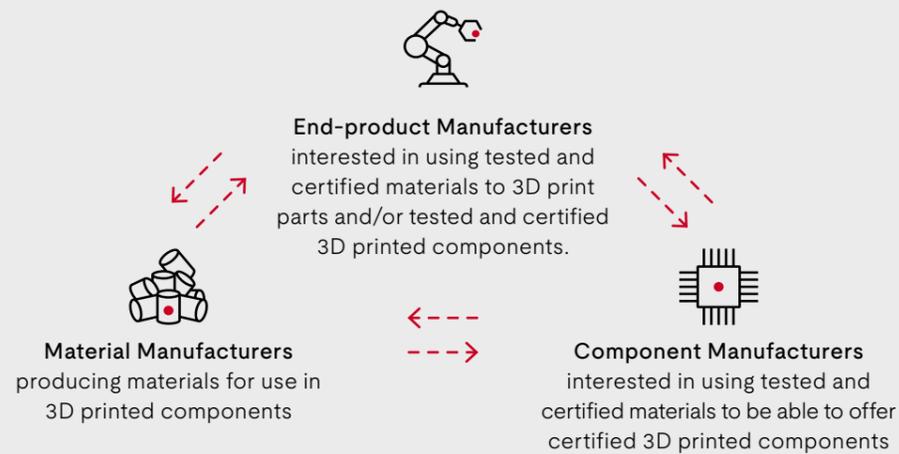
With approximately 50,000 recognized plastic materials, it is the ideal way to promote material properties for use in end-product applications to global markets and to existing or potential customers.

It provides verification that a material is appropriate for specific applications. Manufacturers using a certified material are ensured that the material is being monitored and assessed at regular intervals by an independent test laboratory, by UL Solutions.

A Blue Card is automatically issued when a material intended for 3D printing receives a UL Solutions Recognized Component Mark.

Certified materials are added to the UL Product iQ® and Prospector® databases, which are used by end product manufacturers to find providers of verified materials and components.

Who benefits from the UL Solutions Blue Card?



Give Value to End Product Manufacturers

The Blue, Yellow and White Cards help shorten the path for manufacturers seeking certification for their end-products or systems. Using UL Solutions tested and certified components, identifiable through the UL Solutions Recognized Components Mark on the card, can save time and money by eliminating the need for further material testing.

UL Solutions Recognized Component Mark



The component recognition marking is found on a wide range of products, including some switches, power supplies, printed wiring boards, some kinds of industrial control equipment – and now also on 3D printed components. Recognized products and materials are permitted to claim compliance with the standards to which they were tested, within conditions of acceptability in the end-application. In Addition, for Plastics Materials the Recognition Mark can be displayed with information regarding testing to international IEC and ISO standards.

Choose your cards right with one of UL Solutions Plastic Certification Programs

Certified Plastics for Additive Manufacturing Program (Blue Card)

- The Blue Card is to be used when the material has been processed using one of the following 3D Printing technologies:
 - Material Extrusion
 - Material Jetting
 - Powder Bed Fusion Systems
 - Binder Jetting
 - Sheet Lamination
 - VAT Polymerization

The Blue Card lists:

- Material safety performance property ratings
- 3D printer model designation and test specimen build parameters specific to the technology (e.g., build plane, raster angle, air gap, etc. for material extrusion technology)
- Additional information about processing may be included that has a demonstrated influence on the properties and performance of the printed test specimens

Plastics Recognition Program (Yellow Card)

- The UL Solutions Yellow Card is typically applied when one of the following traditional manufacturing technologies is employed:
 - Blow molding
 - Rotational molding
 - Extrusion molding
 - Injection molding
 - Vacuum forming

- The UL Solutions Plastics Recognition Program (UL Solutions Yellow Card) is a digital product information card for plastics certified by UL Solutions
- It lists multiple safety and performance-related properties of tested materials to appropriate standards and is automatically issued when plastics receive a UL Solutions Recognized Component Mark

International Qualifications

- Manufacturers can add value by increasing coverage beyond safety certification parameters, and include the performance properties and international qualifications customers are looking for
- These can be found as a White Card, an extension at the bottom of each UL Solutions Yellow Card and UL Solutions Blue Card.

Advantages for Material Manufacturers

As certified materials are added to the UL Product iQ® and UL Prospector® databases, your Blue Cards, Yellow Cards and White Cards are immediately visible to thousands of designers, engineers, and suppliers searching for a material or component provider who meets certain safety and performance requirements.

Product iQ is UL Solutions' online location for certification information. A free Product iQ account helps users verify UL certification of products and components, locate UL Solutions guide information and search for alternative certified products. Certification information is available to users in a Datasheet view as well as the Classic Blue Card view. productiq.ul.com

UL Prospector® is the premier database for manufacturers to quickly find the precise materials they need. Bringing together thousands of suppliers, Prospector offers an online service to sort and search materials by properties, applications, safety data, performance characteristics and more. ULProspector.com

...and End-Product Manufacturers

Save time and money in the process of seeking certification for end products or systems by using the UL Certified plastics. UL Certified plastics are also covered under UL Solutions Follow-Up Services – a product's ongoing certification assessment that helps ensure that products continue to meet UL standards of safety and performance.

Keeping it confidential

If you are looking for a more confidential solution, we offer:

Proprietary Cards – these cards can still be accessed via the above databases, but the only publicly-viewable information is the company name. No product names or ratings are viewable.

Unlisted Cards – these cards are not listed on any database and can only be used by the owner of the card.



For more information on UL Solutions
services for Additive Manufacturing (AM) and
AM materials certification programs, visit:
[UL.com/AM](https://www.ul.com/AM)
[UL.com/BlueCard](https://www.ul.com/BlueCard)



[UL.com/Solutions](https://www.ul.com/Solutions)

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