



Frequently Asked Questions

ULTEM™ 9085 Resin

1. What is ULTEM™ 9085 resin?

ULTEM™ 9085 resin is a thermoplastic developed primarily for the aerospace industry and also has applications in the automotive and military industries. ULTEM™ 9085 resin is a strong, lightweight, flame-retardant thermoplastic widely used in aircraft interiors. The material has a V-Zero rating for flame, smoke and toxicity (FST). ULTEM™ 9085 resin is certified for use on commercial aircrafts, which will allow manufacturers to bypass a lengthy certification process. The material is an ideal candidate for functional prototyping, concept modeling, manufacturing tooling aids, and production parts.

2. Why is the material called ULTEM™ 9085 resin?

ULTEM™ 9085 resin is a thermoplastic resin manufactured by SABIC Innovative Plastics. As you know, with all the other FDM thermoplastics the resin manufactures names and resin formulations are highly confidential.

Stratasys has intentionally kept ULTEM™ 9085 resin as the product name and will disclose SABIC as the thermoplastic resin manufacture in an effort to allow our FDM customers and prospects to capitalize on the material certifications already in place for ULTEM™ 9085 resin (primarily in the Aerospace industry). Bypassing these certifications can cut years and tens of thousands of dollars from the approval process / certification process for various applications. As a result this should greatly remove barriers and accelerate the sales cycle in applications requiring certifications.



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3. Who is the target market for ULTEM™ 9085 resin?

ULTEM™ 9085 resin has been a frequently requested material from Stratasys' Aerospace customers and prospects. The Aerospace market is the primary target for this new material. In addition, there are additional markets such as the automotive and military industries.

- Target Markets
- Aerospace
- Military
- Automotive

4. What are the unique properties of ULTEM™ 9085 resin?

ULTEM™ 9085 resin carries a variety of unique thermoplastic properties. It's strength to weight ratio, V-Zero rating for flame, smoke and toxicity (FST), flight certification, and high heat deflection temperature (350° F / 177° C) set ULTEM™ 9085 resin apart from any other thermoplastic currently available on FDM systems from Stratasys. These unique properties compliment the already diverse family of thermoplastics available on Stratasys FDM systems and are expected to open new applications in the aerospace, automotive, and military industries.

Unique Properties

- V-Zero rating for flame, smoke & toxicity (FST)
- High strength to weight ratio
- High heat deflection temperature (350° F / 177° C)
- Flight & other certifications in aerospace industry

5. What FDM systems will ULTEM™ 9085 resin be available on?

ULTEM™ 9085 resin is available on the Fortus 450mc and F900. System and tip/slice configurations are listed below.

System	Model Tip	Support Tip
Fortus 450mc™	T16 (10 slice)	T16 (all slices)
	T16A (10 slice)	
	T20 (13 slice)	
F900™	T16 (10 slice)	T16 (all slices)
	T16A (10 slice)	
	T20 (13 slice)	

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6. What is the difference between the T16 and T16A tips?

The T16A tip has a redesigned tip that reduces the instances of defects in builds and has increased mechanical strength compared to the T16 tip. For example, the ZX tensile strength at break for the T16 tip is 7,850 psi (54.1 MPa) while for the T16A tip it is 6,030 psi (41.6 MPa) on the Fortus 450mc.

7. What support material does ULTEM™ 9085 resin work with?

ULTEM™ 9085 resin has its own unique breakaway support material.

8. What are the specific material properties of ULTEM™ 9085 resin?

ULTEM™ 9085 Resin Properties ¹	
Mechanical – XZ Orientation	
Tensile Strength (peak)	10,000 psi (69.2 MPa)
Tensile Elongation @ break	5.4%
Flexural Strength	15,000 psi (104 MPa)
IZOD Impact, Notched	1.66 ft-lb/in (88.5 J/m)
Mechanical – ZX Orientation	
Tensile Strength (peak)	5,710 psi (39.4 MPa)
Tensile Elongation @ break	1.9%
Flexural Strength	10,600 psi (73.1 MPa)
IZOD Impact, Notched	0.735 ft-lb/in (39.2 J/m)
Thermal	
Heat Deflection at 264 psi	172.9 °C (343.2 °F)

¹ As printed on the F900

9. What is the proper way to use the ULTEM™ 9085 resin trademarked name?

Since ULTEM™ 9085 resin is a trademark of SABIC, it is required that we use a ™ after ULTEM™ in every instance of ULTEM™ 9085 resin in the document's title and body text.

Also, at the close of the document, the following footnote must be added: 9085, 1010 and ULTEM™ are trademarks of SABIC, its affiliates or subsidiaries.

Stratasys Headquarters

7665 Commerce Way,
Eden Prairie, MN 55344
+1 800 801 6491 (US Toll Free)
+1 952 937-3000 (Intl)
+1 952 937-0070 (Fax)

stratasys.com

ISO 9001:2015 Certified

1 Holtzman St., Science Park,
PO Box 2496
Rehovot 76124, Israel
+972 74 745 4000
+972 74 745 5000 (Fax)

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