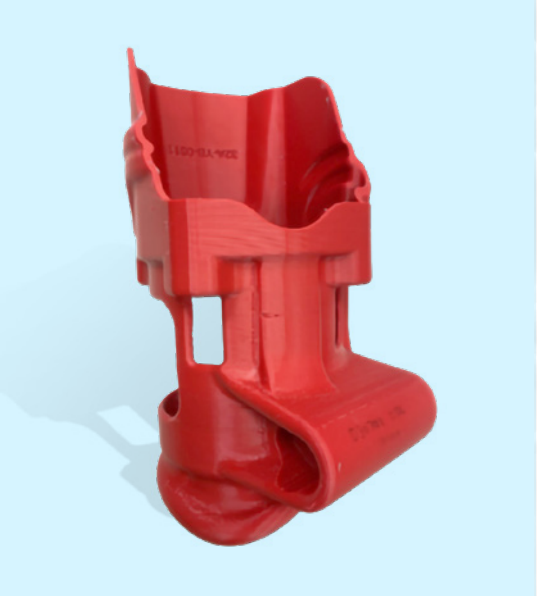

FDM TPU 92A for F123 Series

Quick Reference Card

Part Number Table:

Part Number	Description
Filament Spools	
333-70001	TPU 92A Red, 60 cu. in.
333-60201	TPU 92A Black, 60 cu. in.
333-63500	QSR Soluble Support, 60 cu. in. - F123 Series™
Printer Consumables	
123-00321-S	F123 Series Elastomer Extrusion Head (blue cover)
123-00402-S	F123 Standard Head (black cover)
123-00302-S	F170 Build Tray
123-00303-S	F190CR Build Tray
123-00304	F370/F370CR Build Tray

Description of Product:

Stratasys FDM® TPU 92A is a high-performance thermoplastic polyurethane with a Shore A hardness of 92, offering exceptional elongation, toughness, durability, and abrasion resistance. Designed for FDM 3D printing, it enables the rapid production of large, complex elastomer parts such as flexible hoses, tubes, air ducts, seals, protective covers, and vibration dampeners. Compatible with QSR™ soluble support material, FDM TPU 92A is available on the F123 and F123CR (composite-ready) Series 3D printers.

FDM TPU 92A is a flexible FDM material that comes in two colors:

- Print large complex elastomeric parts utilizing soluble support
- High elongation, superior toughness, and extremely durable material
- Print in black or highly visibility color - red
- Cost-effective, reliable, easy-to-use system

Primary Applications:

Sacrificial parts

Assembly guides/aides

Masking and packaging

Key Markets:

Automotive – Great for tough and abrasion-resistant tubing, ducting, or housings.

Aerospace – High visibility red is perfect for any “remove before flight” components.

General Manufacturing – Suitable for impact-resistant and non-marring jigs, fixtures, and coverings.

Key Attributes:

Multiple colors: black and red

High elongation: superior toughness, extreme durability

Challenges Customers Have with Current Solutions:

Customers want a highly visible flexible material for factory operation to better identify tooling.

Benefits of TPU 92A:

Most FFF TPU solutions lack compatibility with dedicated support materials, limiting the complexity and variety of parts that can be printed. Stratasys FDM TPU 92A, however, comes preconfigured to work effortlessly with QSR support when printing on the F123 Series of FDM printers. This optimized pairing can reduce the overall part cost by up to 1.8X and decreases labor cost by 76%.

With the large build volume of Stratasys F123 printers plus the reliable pairing of TPU 92A and QSR, large, complex, and flexible end-use parts can easily be printed. From intricate sweeping ducts to durable flexible hoses, Stratasys FDM TPU 92A delivers reliable solutions for even the most demanding applications.

Printing Challenges and Tips:

Wet Material

TPU is a hygroscopic material, meaning it absorbs moisture from the surrounding air, which can lead to print quality issues or tip plugging. To prevent this, always ensure the material is placed in a dry, airtight container when it is not in use. Desiccant can be used to help lower humidity levels in the container. Note that the printer material bay is not airtight and therefore should not be used as storage.
To actively dry the material, place the entire spool in an oven at 75 °C for 12 – 24+ hours. Drying time may vary depending on the oven type and the initial moisture content of the material.

Tip Cleaning

Before printing, it is very important to ensure that the tip of the print head is clean from any buildup or debris. This includes any material buildup that may have occurred under the plastic cap. A dirty tip can lead to print quality issues such as rough surfaces, poor fill quality, and stringing. For this reason, it is suggested to analyze the tip before printing and clean it if necessary.

Tip Plugging

Occasionally, the print head tip may become plugged at the start of a print. If this occurs, follow these steps:

1. **Unload the Material:** Using the display at the front of the printer, unload the material from the print head. Check the filament to ensure it is free of any damage, such as divots or signs of grinding.
2. **Trim the Filament:** Cut approximately 8 inches (20 cm) from the end of the filament.
3. **Reload and Purge:** Reload the filament and observe whether material begins to extrude from the print head. If not, run the material through a purge cycle.
4. **Repeat if Necessary:** Continue to unload, inspect, reload, and purge until the tip is no longer plugged. This may need to be done several times.

If the issue persists, please contact your local Stratasys representative for further assistance.