

Tenacious user guide

1. Introduction

Tenacious Clear & Obsidian Black is developed to be a resin with excellent impact resistance. It can be flexible but also a lot of strength, especially when printed thick. While it does not have the same level of hardness/resolution as other resin, it still can capture decent amount of details. And it should not stink up user's work environment.

The Shore Hardness of Tenacious Flex Black is 70A. It is softer than regular Tenacious and rebounds faster. It can quickly recover its shape after being subjected to external bending and compression pressure. Its high elasticity allows it to withstand greater impact.

The shelf life of the resin is one and a half years.

Even if it can be stored for such a long time, we still recommend that you use it in half a year.

UV Resin is a liquid sensitive to temperature, light, and time. Long-term storage will cause the components and pigment of the resin to precipitate and separate.

2. Before Printing

- Due to higher polymer content for its outstanding mechanical properties, the ideal printing condition for Tenacious is over 25C.
- If user can maintain a resin temperature of 30C, the printing time could be further reduced
- It is a good practice to mix resin and expose the bottom of the vat to air before printing. This replenish oxygen in the vat and helps reduce peel force.
- It would also ensure print consistency if user can get the initial resin temperature above 25 and keep the environmental temperature above 20 C.

3. Print settings

Please download profiles here based for Elegoo, Anycubic, Phrozen, Peopoly, EPAX, Creality: [Click here to download profiles](#)

Check out recommended support settings

Exposure - Tenacious (Clear)							
Recommended		Resin Temperture 25-35C			Room temperature 20-28C		
Printer	Layer Height	Exposure (s)	# of Initial Layers	Exposure for Init Layers	Exposure (s)	# of Initial Layers	Exposure for Init Layers
Photon	50um	15 (s)	4	60 s	15 (s)	6	80 s
EPA X1	50um	12 (s)	4	60 s	12 (s)	6	60 s

EPA X1	100um						
Shuffle	50um						
Shuffle XL	50um						
D7	50um						
Inkspire	50um				15 (s)	6	80 s
Photon Mono	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Photon Mono X	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Mars 2 Pro	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Mars 3	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Saturn	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Sonic Mini 4K	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Might 4K	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Mega 8K	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Peopoly Printers	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						

*Note: Inkspire does not specify its light output, one user told us it is very closely to Photon.

Exposure - Tenacious (Obsidian Black)							
Recommended		Resin Temperature 25-35C			Room temperature 20-28C		
Printer	Layer Height	Exposure (s)	# of Initial Layers	Exposure for Init Layers	Exposure (s)	# of Initial Layers	Exposure for Init Layers
Photon	50um	12 (s)	4	40 s	12 (s)	4	40 s
EPA X1	50um	9 (s)	4	40 s	9 (s)	4	40 s
EPA X1	100um						
Shuffle	50um						
Shuffle XL	50um						
D7	50um						
Inkspire	50um				15 (s)	6	80 s
Photon Mono	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Photon Mono X	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Mars 2 Pro	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Mars 3	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						
Saturn	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing						

Sonic Mini 4K	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Might 4K	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Mega 8K	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Peopoly Printers	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing

*Note: Inkspire does not specify its light output, one user told us it is very closely to Photon

Exposure - Tenacious Flex Black							
Recommended		Resin Temperature 25-35C			Room temperature 20-28C		
Printer	Layer Height	Exposure (s)	# of Initial Layers	Exposure for Init Layers	Exposure (s)	# of Initial Layers	Exposure for Init Layers
Photon	50um						
EPA X1	50um						
EPA X1	100um						
Shuffle	50um						
Shuffle XL	50um						
D7	50um						
Inkspire	50um						

Photon Mono	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Photon Mono X	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Mars 2 Pro	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Mars 3	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Saturn	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Sonic Mini 4K	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
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Mega 8K	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing
Peopoly Printers	Where to find printer profiles: https://drive.google.com/drive/folders/1eCz4_dc0fT-jfBLp4L9mKYebY90lfHHO?usp=sharing

4. Recommend best support settings

Tenacious has the most impact resistance of all the Siraya Tech resins and thus has the most flexibility. This means it likes thicker support to print well.

Depending on the printer, you may want to check out the Blu recommended support setting as a starting point. It is best to print no less than 80um for this resin.

Tenacious Support recommendation:

Tenacious has the more flexibility of all our resins Make sure the support tip diameter is 1.2mm for larger prints with a depth of 0.5mm. See more full settings recommended

<https://www.facebook.com/groups/sirayatech/permalink/290257771885611/>

5. Cleaning

- Use a painter brush (or any brush made with hair) remove excess resins on the printed part with Use 95% concentrated Ethanol (preferred) or IPA to clean. Some form of methnol should work but make sure it does not contain acetone.
- After 2-3 minutes of cleaning action, remove alcohol with a hair dryer or air blower. For complex part with lots cavities, it may be a good idea to clean/dry multiple times.
- User can check by touching the dried surface of the part to see if it is still sticky. If the dried surface is still sticky, wash some more and dry again.

6. Post Curing

- Tenacious reached its optimal strength when the printed part is post-cured with UV after cleaned. Use 395-405nm UV light and cure for about 25 minutes.
- Make sure resin is completely cleaned off and there is not alcohol left on the print before curing. Curing by submerging object in water will significantly increase curing efficiency

7. Mechanical Properties

Tenacious Clear and Obsidian Black

Shore Hardness (D)	65D
Tensile Stress at Break (MPa)	28
IZOD Impact (Notched, J/m)	57
HDT at 0.455 MPa (°C)	55
Elongation at Break (%)	70
Young's Modulus (MPa)	800

Tenacious Flex Black

Shore Hardness (A)	70A
Tensile Stress at Break (MPa)	5
IZOD Impact (Notched, J/m)	-
HDT at 0.455 MPa (°C)	-
Elongation at Break (%)	140
Young's Modulus (MPa)	100