

## LulzBot Filament Testing Report

Manufacturer: NinjaTek  
Filament Name: Cheetah, Multiple colors  
Filament Type: PLA  
Tested By: Brent M  
Date: 02/01/2016

**Ease of use:** 7/10  
**Appearance:** 10/10 Same basic color set as Ninjaflex/Semiflex  
**Color consistency:** 10/10  
**Print temperature Range (C):** 205-230/0-110  
**Variance in diameter:** (2.86-2.93)  
**Minimum bend radius:** NA, you can tie this stuff in a knot :)  
**Prints using current Lulzbot profiles/temps:** Yes, profiles will have to be created for this material due to it's much higher print speed capability.

### General Notes:

- Wipe and probe from ninjaflex profiles works well
- Has a much smoother surface texture than ninjaflex
- Color was very consistent throughout the roll.
- Shore hardness of 98A, same as semiflex (ninjaflex is 45A)
- This material warps badly on 40C glass with full fan (227 extrusion temperature). Very badly, this material likely can't be printed on bare glass as semiflex can.
- Cheetah sticks reasonable well to PEI but adheres better with gluestick
- Cheetah prints well at at least double the maximum print speed of ABS.
- Fast prints at 36mm/s infill looked good at 227C, should be able to go much faster if we can raise the temperature. (this is at least  $8.64\text{mm}^3/\text{s}$  for cheetah compared to 4.30 for ninjaflex).

### Health or environmental risks:

- 230C is the absolute maximum temperature that this filament should be allowed to reach. Profiles should have temperatures set at 227 or lower in case of temperature fluctuation.
- There is indication that this material is safe up to 250C on Fenner Drives' website, but this needs to be confirmed before we can test higher temperatures.
- Cheetah is poorly biodegradable
- During fused deposition modeling operations, use with ventilation adequate to reduce levels of air contaminants below that which may cause personal injury or illness. Local exhaust ventilation that removes air contaminants from the breathing zone is preferred. General, mechanical, or dilution ventilation may be suitable.

### Disposal Options:

- **Material Disposal:** Incinerate in a licensed facility. Do not discharge substance/product into sewer system. Dispose of in a licensed facility.
- **Container Disposal:** Dispose of in accordance with national, state and local regulations.

**Recommendation:** We should definitely carry this filament as an improved version of semiflex; from my initial impression there is very little reason to use semiflex as opposed to cheetah.

