LulzBot Filament Testing Report

Manufacturer: Proto Pasta / ProtoPlant
Filament Name: High Temperature PLA
Filament Type: Annealable PLA filled
Tested By: Brent M.
Date: 1/25/2015

Ease of use: 8/10
Appearance: 10/10
Size consistency: 9/10
Color consistency: 9/10
Print temperature: 225/60
Prints using Lulzbot profiles/temps: Profile had to be created, strips out with std. PLA profiles

SDS:

- We should include notes to NOT bring the material above it's safe working temperature of 230C max. Doing so could produce "...obnoxious and toxic fumes. Aldehydes. Carbon monoxide (CO). carbon dioxide (CO2)
- As with all plastics, we should warn customers to wear protective equiptment (dust mask) if they will be sanding the printed parts.
- *Disposal:* This filament should not be discharged into waterways, We likely don't need to make a note of this
- No other outstanding hazards noted in the MSDS.

Notes:

- The base material for this filament is Protopasta's high temperature PLA
  - It can't be printed with the standard 205C print temperature, needs 220-230C (225 seems ideal).
  - It can be “annealed” by post processing in an oven at ~70-110C, this increases the heat deflection temperature to up to 140C
- The filament currently comes in dark silver, white, brown (coffee-scented) and greenish (pine scented)
- The packaging is a standard ProtoPasta cardboard spool with lulzbot label, looks nice.
- The color of the filament changes a bit depending on print temperature and speed, similar to wood filled filaments but not as drastic.
- The MSDS states a maximum safe temperature of 230C.

Recommendation: This is definitely a niche filament, but is of excellent quality and produces nice prints. Definitely R&D approved and can be sold once unique profiles are created. There should be a note on the product page to not bring the filament above 230C.

Filament	Variance in diameter	Maximum out of round	Print temperatures (C)
ProtoPasta High temperature PLA (2.85 mm)	2.82-2.86mm (0.04mm) in 10m sample	2.82-2.84mm (0.02mm)	225/60