

# Technical Data Sheet

## Biome3D

### General Information

3D Fuel™ Biome3D is a biodegradable thermoplastic that has similar characteristics as ABS. It is flexible, malleable, and smooth to the touch, but unlike ABS, Biome3D does not experience much warping and it prints with low odor.

Biome3D was developed by one of the UK's leading developers of intelligent, natural plastics: Biome Bioplastics. Made from plant starches, it has the value of being renewable with the benefits of oil-based filaments.

### Resin Typical Material Properties

Property	Standard*	Biome3D	ABS**
Maximum Tensile Strength, MPa	ASTM D638	35	37
Tensile Strength at Yield, MPa	ASTM D638	26	-
Tensile Modulus, GPa	ASTM D638	2.0	2.1
Tensile Elongation, %	ASTM D638	6.2	-
Notched Impact, J/m	ASTM D256	29	-

\*All test specimen were 3D printed to more accurately represent expected usage

\*\* For comparison

### Printing Information

Printing with Biome3D will be similar to experiences printing with PLA. A print temperature of 190 to 210 degrees Celsius is our recommended starting point. Biome3D prints with little to no warping on a non-heated build surface with a raft. If your printer does have a heated bed, setting it to around 50 degrees Celsius may help with first layer adhesion when printing without a raft. Print speed should remain between 50 and 100 mm/s and should be varied based on part size. Clean the nozzle after every use.

Biome3D has high interlayer adhesion which makes for a print that is less likely to delaminate. Because of this, you may notice that when printing with a raft, the raft may be more difficult to remove than you are used to. This can be taken care of by increasing the distance between the last layer of the raft and the first layer of the part. Most slicing software includes this feature (e.g. MakerBot Desktop: Raft-Model Spacing, Cura: Airgap, Simplify3D: Separation Distance).

### Storage

Like all of our filaments, Biome3D filament comes in a vacuum-sealed resealable bag with a pack of silica gel. In order to prevent the filament from absorbing moisture from the air, when the spool is not in use, place it back in the bag with a silica gel pack and seal it.

### Values

Benefits of using Biome3D include reduced brittleness, increased flexibility, great layer adhesion, no cracking, no odor, and low temperature printing. The surface finish of Biome3D is silky smooth and is easier to sand than PLA. One thing to note about Biome3D is that because of its lower print temperature, it does have a lower heat resistance than ABS.