

ABS

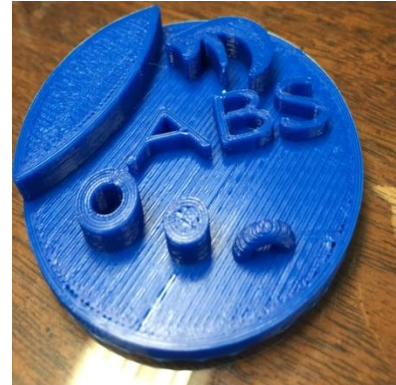
ACRYLONITRILE-BUTADIENE-STIRENE - INLAND

Pre and Post Processing



Spraying build plate with hair spray improves resultant print adhesion to plate, and minimizes warping

Use progressively higher grit sandpapers to remove ridges from layers, and apply finishing spray (XTC or similar) for a shiny finish/waterproof part.



HAZARDS

Print in ventilated conditions to avoid inhalation of potentially toxic fumes, although these are produced in relatively small amounts.

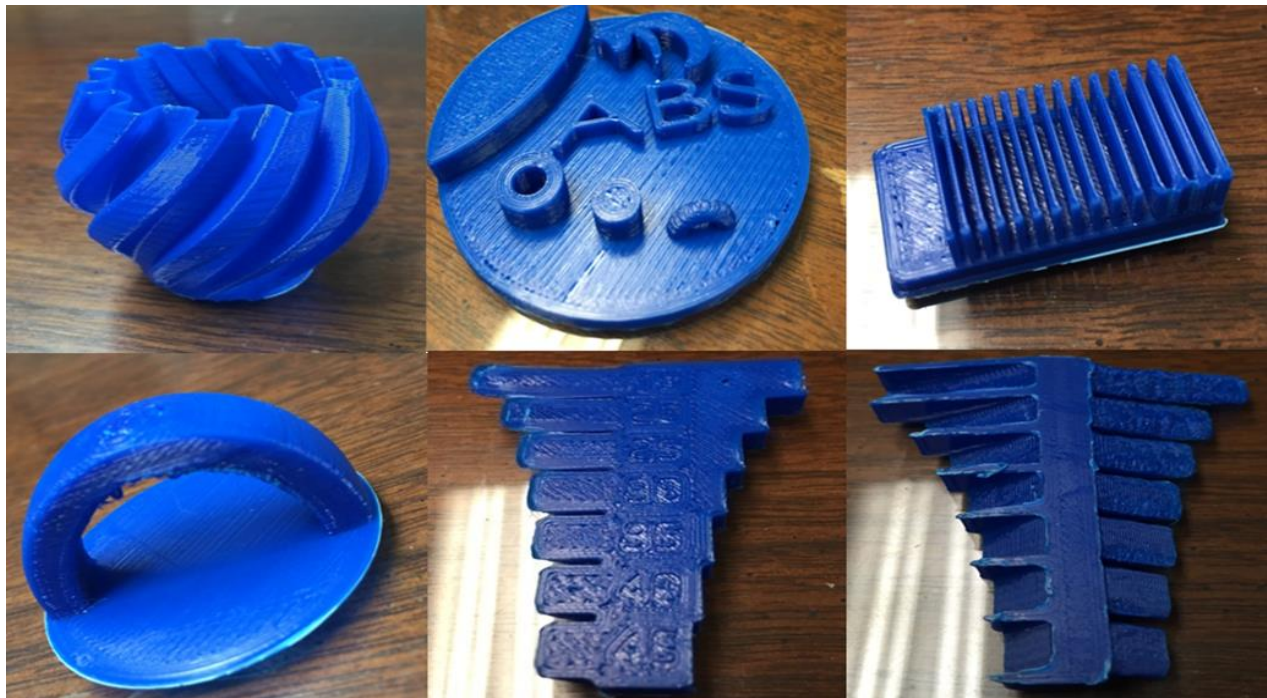
Avoid exposure to direct flame/temperatures greater than 760°F, as this could cause the ABS to catch fire.

SETTINGS TO PRINT WITH	PRIME/UNPRIME:	
<ul style="list-style-type: none"> Temp Range: 210-240 (235 ideal) Recommended flow multiplier: 1.000 Recommended layer size: .1-.3mm Build Plate Temp: 80-110 (85 ideal) Recommended Fan: 50-100% 	<p>Steps: 100</p> <p>Rate: 10,000</p> <p>Time (ms): 25</p> <p>Primes after Tool Change: 1</p>	<p>Steps: 100</p> <p>Rate: 10,000</p> <p>Time (ms): 20</p> <p>Primes after Tool Change: 1</p>
HOW WELL IT HANDLES PRINTS	PROPERTIES OF MATERIAL	
<p>Overhangs: 30°</p> <p>Retraction: 4</p> <p>Circles: 5</p> <p>Layer change: 4</p> <p>Fine detail: 5</p> <p>Curling: 4</p>	<p>Modulus of Elasticity:</p> <p>Yield Strength:</p> <p>Fracture Point:</p> <p>Modulus of Elasticity in Bending:</p> <p>All parts done with a ___% infill</p>	



CHEMICAL/RESISTANCE

Chemical	Water	Vinegar	HCl	Acetone	HF	Sulfuric Acid
Resistance (High/Limited/None)	High	High	Limited	None	None	None
Chemical	Aqua Regia	Bleach	Gasoline	Methyl Alcohol	Ethyl Alcohol	NaOH
Resistance (High/Limited/None)	None	Limited	None	None	High	High



Images (Left to right, top to bottom): Single walled vase, Artifact/Feature size test, Retraction/Feature size test, arch, top of overhang test, bottom of overhang test.

Overhang: Minimum angle to the horizontal at which layers are relatively unperturbed.

Print handling parameters: 5-optimal, 4-very good, 3-fair, 2-passable, 1-very poor

Chemical Resistance: High-no observable affect after a long period of time, Limited-Slight affects over time (swelling, discoloration, slight softening, etc), None-very severely affected by chemical.



NOTES:

Color has a large affect on many of these properties, although the print settings should remain fairly similar. For example, blue ABS has been observed to have the highest strength, and white the lowest.

To deal with white areas caused by cleaning the part, simply run a hot air gun carefully over the piece. This will cause it to melt back slightly, and relax the strain causing white coloration.

Improving the quality of an overhang is possible, with increased fan and increased layer size (note that increased layer size also decreases resolution, however). Below are shown images of the overhang test at 25%, 50%, 75% and 100% fan speeds, as well as two different layer sizes (the standard layer size setup on most prints is 0.2mm).

