HIPS

HIGH IMPACT POLYSTYRENE - *MATTERHACKERS*

Pre and Post Processing

Heated build plate is a must. Polyacrylate-containing hairspray is also suggesting for full plate adhesion.

HIPS can be dissolved in limonene, the stronger the solution, the faster the dissolution. Otherwise post processing is the same as other more common plastics.

HAZARDS (rating 1-10)

Print in a ventilated area, be aware of contact with limonene-containing products.

HIPS swells a fair amount, so keep the feed area cool or use a high pressure feed system (see notes).

SETTINGS TO PRINT WITH

- Temp Range: 220-240°C (ideal 230)
- Recommended flow multiplier: 1.000
- Recommended layer size: .1-.3mm
- Build Plate Temp: 80-110°C (often max temp of plate)
- Recommended Fan: 70%-100%

PRIME/UNPRIME:

Steps: 100	Steps: 100
Rate: 10,000	Rate: 10,000
Time (ms): 25	Time (ms): 20
Primes after Tool Change: 1	Primes after Tool Change: 1

HOW WELL IT HANDLES PRINTS

Overhangs: 15° and lower
Retraction: 5
Circles: 5
Layer change: 4
Fine detail: 4
Curling: 4

PROPERTIES OF MATERIAL

Modulus of Elasticity:

Yield Strength:

Fracture Point:

Modulus of Elasticity in Bending:

All parts done with a ___% infill

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

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:

HIPS has a strong tendency to swell when heated and mechanically disturbed, and so cooling the feed area with compressed air or similar techniques will normally help. However, the Hyrel MK 2 extruder, and similar dual drive heads have the ability to put enough back pressure to print without requiring cooling.

While HIPS does not absorb a lot of water when left sitting, it's still a fairly good idea to keep it in a dry area.