Ultrasint® PP 1400 Black
Product Launch Information

BASF 3D Printing Solutions (B3DPS)

Status November 2022

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Ultrasint PP 1400 Black : **Summary**

- Name: **Ultrasint PP 1400 Black**
- Article no.: **300299**
- Color: **Black/Grey**
- Price: **Same as PP nat 01**
- Packaging size: **20 kg**
- Printing Parameters Available for: **Farsoon, Prodways (only tested on P1000 – open parameter kit required), 3D System**

- Preliminary mechanical data:

Mechanical Properties	X	Z
Tensile Strength [MPa]	29	29
E-Modulus [MPa]	1250	1300
Elongation at Break [%]	25	25
Charpy Impact (unnotched) [kJ/m²]	34	28

Material **Description**

This multi-purpose material is designed to enable PPs in desktop machines while also assuring a very easy and stable process on any PBF equipment. It delivers the well-known characteristics of polypropylene such as excellent chemical resistance, ductility and media tightness without loosing its rigidity and with isotropic results giving the end customer more freedom while printing. The new Ultrasint® PP 1400 Black it is also a strong ally for sustainability since not only it has a of refresh rate of 40 % (20 % in testing) but also due to the well documented studies about the recyclability of PP end parts.

Ultrasint® PP 1400 Black benefits at a glance

- Also suitable for desktop machines
- Extremely high rigidity
- Excellent chemical resistance
- Low density
- Recyclability
- Weldability with other PP parts
- Easy finishing incl. smoothing, Ultracur3D® UV Adhesion Promoter
- Color: black (compounded pigment for better consistency)

With the current formulation Ultrasint® PP 1400 Black can address reservoirs, piping and housing in the industrial/automotive industries, laboratory holders/vessels and customized chemical tools.

Material **Value Proposition**

SUITABLE ALSO FOR NEW LASER SYSTEM

- Finally enables PP for desktop machines while being a good material for traditional roller machines.
- Suitable for the new Farsoon **FLIGHT** System

FUNCTIONAL PROPERTIES

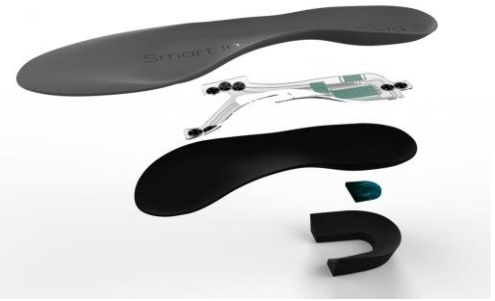
- Chemical resistance
- Welding capabilities (with traditional PP parts!)
- Low moisture absorption
- Durable parts

ALLY FOR SUSTAINABILITY & COST PER VALUE

- Low density - Reduces material used
- End part recyclability – Known material to recycle!
- Competitive cost per Kg
- low frefresh rate – 40 % confirmed, 20 % in testing
- Lower environmental footprint vs. PA11/12

Material **Target Applications**

AUTOMOTIVE	INDUSTRIAL	CONSUMER GOODS	Medical
Fluid systems, technical applications such as gears, fluid reservoirs (water, brake fluid, batteries cooling e-mobility…), air ducts, piping, fasteners and clips	Industrial manufacturing, Machinery parts (tubes, piping, fluid system reservoirs)	Gaming tools, household appliances (washer, dryer, fridge, dishwasher safe plates…),	Insoles, Medical instruments builders



Certifications & Post Processing

Bio compatibility	Test under demand after formulation freeze.
Food contact	Not suitable for now.
UV Resistant	Testing in progress.

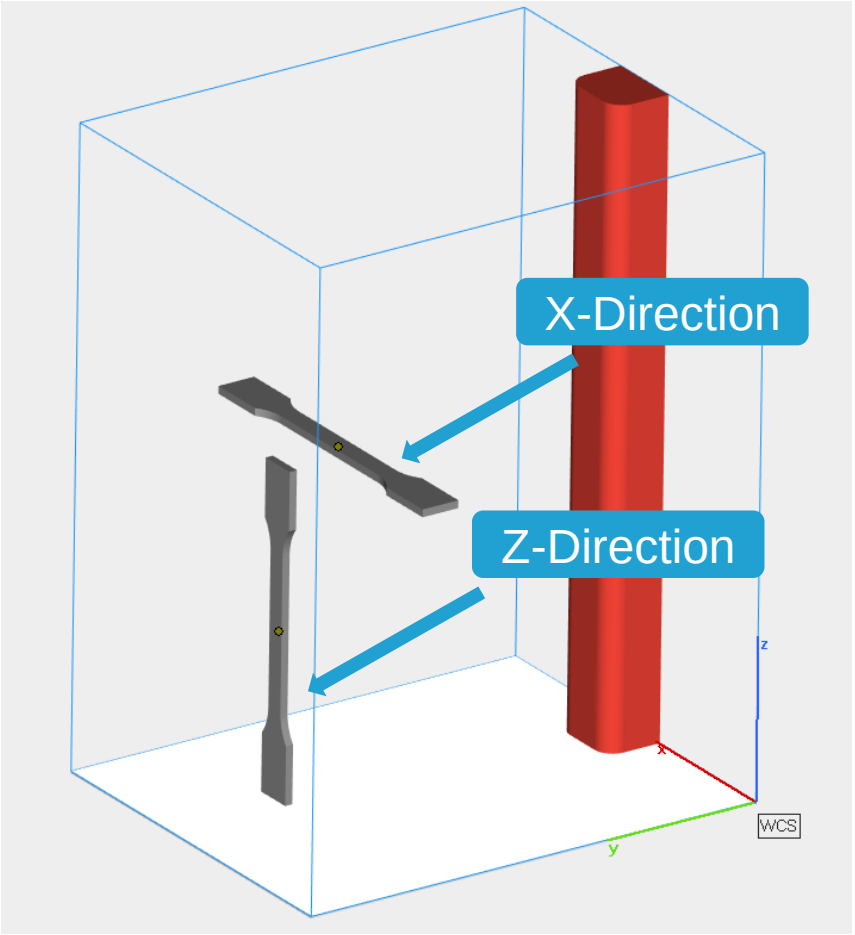
Smoothing	Smoothing available soon via AMT + DyeMansion.
Coating	Testing in progress. Results available soon.
Other	

Ultrasint PP 1400 Black: **Mechanical Properties – ISOTROPIC !!!**

- **Isotropic behavior**:
  - The PP 1400 Black behaves isotropically to some extent
  - Nesting of builds is way easier, regardless of the orientation no critical mechanical-decreasing is to be expected

- **Highest elongation at break (%) in Z-direction**

E-Modulus X/Y [MPa]	E-Modulus Z [MPa]	Tensile Strength [MPa]	Tensile Strength [MPa]	EAB X/Y [%]	EAB Z [%]
1250	1300	29	29	**25**	**25**

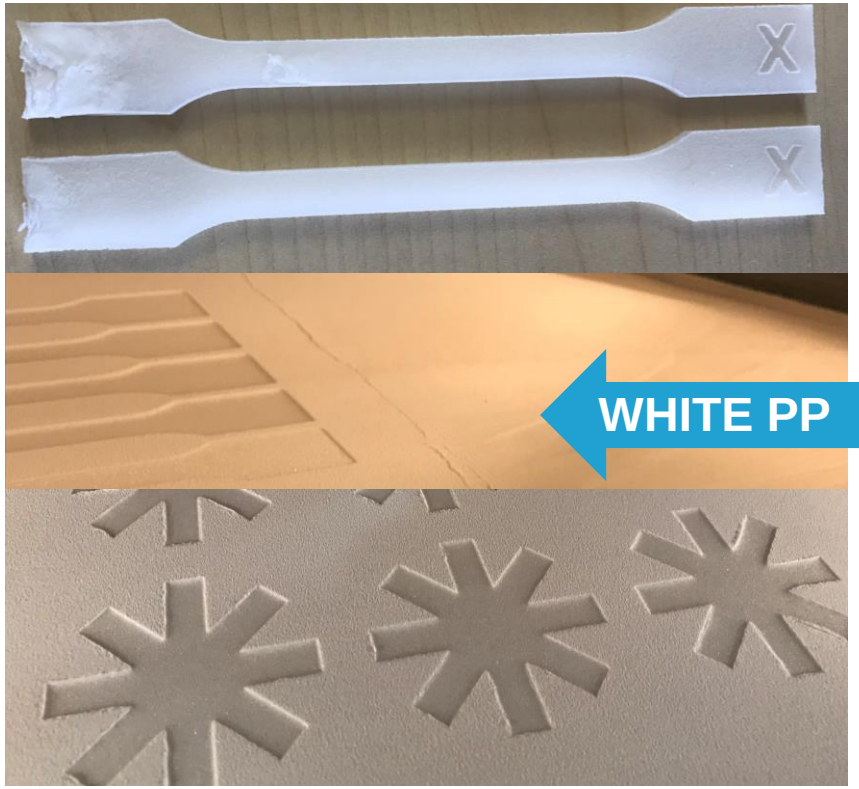


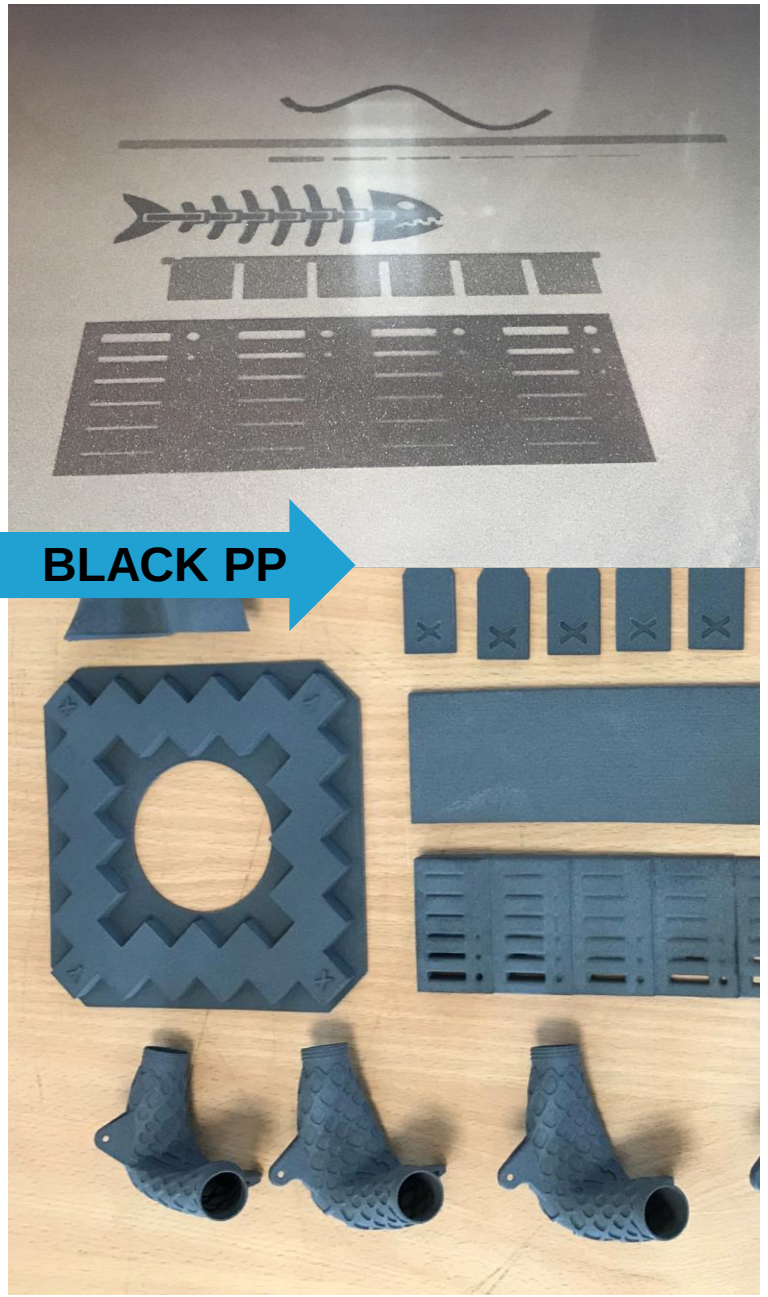
Ultrasint PP 1400 Black: **Processability**

- **Printing Process**:
  - The easiest to process PP so far !!!
  - Full builds with high packing densities are no problem
- **Post Processing:**
  - Extremely soft powder cake !!!
  - Powder adhesion very low, therefore only minimal manual effort required - short-term auto-sandblasting is sufficient

Ultrasint PP 1400 Black: **Processability**

- **Typical problems with White SLS PP processing**
  - Random curling & raised parts in the same build
  - Contour curling due to temperature fluctuations
  - Powder adhesion on printed parts
- **PP Black does not show any problems of this kind**



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