# **HP 3D High Reusability CB PA 12**

## **Engineering-grade white parts**



#### Strong, functional complex parts

- Robust thermoplastic produces highdensity parts with balanced property profiles and strong structures.
- Provides excellent chemical resistance to oils, greases, aliphatic hydrocarbons, and alkalies.<sup>1</sup>
- Ideal for white parts like jigs, fixtures, labeling, presentation models, functional prototypes.

#### **Quality parts without trade-offs**

- Produce functional white parts with optimal mechanical properties.
- Get consistent performance while achieving up to 80% surplus powder reusability.<sup>2</sup>
- Optimize cost and quality with functional white parts and industry-leading reusability.<sup>3</sup>

## Engineered for HP Multi Jet Fusion technology

- Designed for production of white functional parts across a variety of industries.
- Provides the best balance between performance and reusability.<sup>4</sup>
- Engineered to produce functional prototypes with fine detail and dimensional accuracy.

For more information, please visit hp.com/go/3DMaterials



## **General properties**

| Category           | Measurement                                  | Value                    | Method           |
|--------------------|--|--------------------------|------------------|
| General properties | Powder melting point (DSC)                   | 189° C/372.2° F          | DIN EN ISO 11357 |
|                    | Particle size                                | 58 µm                    | ISO 8130/13      |
|                    | Bulk density of powder                       | 0.442 g/cm³/0.016 lb/in³ | ISO 60           |
|                    | Density of parts                             | 1.03 g/cm³/0.037 lb/in³  | ASTM D792        |
| Reusability        | Minimum refresh ratio for stable performance | 20%                      |                  |

### Technical specifications<sup>5</sup>

#### **HP Jet Fusion 540 3D Printer**

| Category              | Measurement                                 | Value     | Method                  |
|-----------------------|---|-----------|-------------------------|
| Mechanical properties | Tensile strength, max load, <sup>6</sup> XY | 46 MPa    | ASTM D638               |
|                       | Tensile strength, max load, <sup>6</sup> Z  | 46 MPa    | ASTM D638               |
|                       | Tensile modulus, <sup>6</sup> XY            | 1600 MPa  | ASTM D638               |
|                       | Tensile modulus, <sup>6</sup> Z             | 1700 MPa  | ASTM D638               |
|                       | Elongation at break, <sup>6</sup> XY        | 20%       | ASTM D638               |
|                       | Elongation at break, <sup>6</sup> Z         | 14%       | ASTM D638               |
|                       | Izod impact notched (@3.2 mm, 23° C), XY    | 3.1 kJ/m² | ASTM D256 Test Method A |
|                       | Izod impact notched (@3.2 mm, 23° C), Z     | 2.8 kJ/m² | ASTM D256 Test Method A |

## **Ordering information**

|                  | HP 3D High Reusability<br>CB PA 12       |  |
|------------------|--|--|
| Product number   | V1R30A                                   |  |
| Weight           | 4 Kg/8.8 lb                              |  |
| Capacity         | 10L <sup>7</sup>                         |  |
| Dimensions (xyz) | 462 x 213 x 208 mm (18.2 x 8.4 x 8.2 in) |  |
| Compatibility    | HP Jet Fusion 500 Series 3D Printers     |  |

#### **Eco Highlights**

- · Powders and agents are not classified as hazardous8
- · Cleaner, more comfortable workplace—enclosed printing system, and automatic powder management9
- Minimizes waste due to industry-leading reusability of powder<sup>10</sup>

Find out more about HP sustainable solutions at hp.com/ecosolution

Dynamic security enabled printer. Only intended to be used with cartridges using an HP original chip. Cartridges using a non-HP chip may not work, and those that work today may not work in the future. More at: hp.com/go/learnaboutsupplies

Learn more at hp.com/go/3DMaterials

- 1. Tested with diluted alkalies, concentrated alkalies, chlorine salts, alcohol, ester, ethers, ketones, aliphatic hydrocarbons, unleaded petrol, motor oil, aromatic hydrocarbons, toluene, and DOT 3 brake fluid.
- 2. HP Jet Fusion 3D Printing Solutions using HP 3D High Reusability CB PA 12 provide up to 80% post-production surplus powder reusability, producing functional parts batch after batch. For testing, material is aged in real printing conditions and powder is tracked by generations (worst case for reusability). Parts are then made from each generation and tested for mechanical properties and accuracy.
- 3. Based on using recommended packing densities and compared to selective laser sintering (SLS) technology. offers excellent reusability without sacrificing mechanical performance. Tested according to ASTM D638,  $ASTM\,D256, ASTM\,D790, and\,ASTM\,D648\,and\,using\,a\,3D\,scanner\,for\,dimensional\,accuracy.\,Testing\,monitored$ using statistical process controls.
- $4. \ Compared to selective laser sintering (SLS) technology. Tested according to ASTM D638, ASTM D256, ASTM$ D790, and ASTM D648.
- 5. The following technical information should be considered representative of averages or typical values for white parts (i.e., RGB=255,255,255) and should not be used for specification purposes. These values refer
- to a Balanced print mode. Values shown are preliminary, subject to change without notice.

  6. Test results realized under the ASTM D638 with a test rate of 10 mm/min, specimens type V.
- 7. Liters refers to the materials container size and not the actual materials volume. Materials are measured in kilograms.
- 8. The HP powder and agents do not meet the criteria for classification as hazardous according to Regulation (EC) 1272/2008 as amended.
- 9. Compared to manual print retrieval process used by other powder-based technologies. The term "cleaner" does not refer to any indoor air quality requirements and/or consider related air quality regulations or testing that may be applicable.
- 10. Compared to PA 12 materials available as of June, 2017. HP Jet Fusion 3D Printing Solutions using HP 3D High Reusability CB PA 12 provide up to 80% post-production surplus powder reusability, producing functional parts batch after batch.

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