











Materials Guide

Click the material name to learn more.




SHAPEWAYS

Material Name	Material	Technology	Description	Finishes	Colors	Lead Time	Advantages/Value Props	Applications
Accura 60	Accura 60	SLA	Accura 60 is a translucent and rigid acrylate-based plastic. It is 3D printed using a large format stereolithography (SLA) printer capable of producing small to large parts with high resolution and detail as well as smooth surfaces with limited layer lines. This material is well suited for challenging functional assemblies that require transparency.	Natural		6 - 20 BD	Good Strength, High Clarity, High Rigidity, Translucent, Strong, Good Surface Finish.	Lighting applications, master patterns for vacuum casting, transparent parts, fluid flow and visualization models.
Accura Xtreme	Accura Xtreme	SLA	Accura Xtreme is a gray and rigid acrylate-based plastic. It is 3D printed using a large format stereolithography (SLA) printer capable of producing small to large parts with high resolution and detail as well as smooth surfaces with limited layer lines. This material is well suited for challenging functional assemblies with a smooth, injection molded-like surface finish.	Natural		6 - 20 BD	Durable, High Toughness, Good Dimensional Accuracy, Good Surface Finish, Watertight, Impact resistance.	Master patterns for vacuum casting, patterns, durable assemblies, snap fits, enclosures.
Accura Xtreme 200	Accura Xtreme 200	SLA	Accura Xtreme 200 is an ultra-tough white acrylate-based plastic. This photopolymer resin plastic has excellent strength, durability, surface finish, and dimensional accuracy.	Natural		6 - 20 BD	Durable, High Toughness, High Strength, Good Dimensional Accuracy, Good Surface Finish.	Master patterns for vacuum casting, Patterns, snap fits.
Fine Detail Plastic	Visijet M3 Crystal	MJP	Fine Detail Plastic is an acrylic material capable of extremely high detail and is a popular choice for creating scale models, miniature sets, and other decorative products.	Smooth Smoothest		3 - 20 BD	High level of detail, Thin features, Complex geometry, Interlocking, Smooth surface (ideal for painting).	Scale models, miniatures, jewelry prototypes, mold masters.
High Definition Full Color	Photopolymer	Material Jetting	Using the UV curing inkjet process, the UV ink (CMYK, White, Clear) is cured layer by layer. This can produce objects with more than 10 million different colors. Final parts can satisfy professionals' exacting requirements to make full color and fine modeling of high details for examples like figures, 3D maps, and architecture mock-ups. Post processing includes overcoating and attachment of screws to an object after printing.	Standard Matte		11 - 16 BD	Vivid full color, Photorealistic color accuracy, Fine details	Figurines, medical models, architecture models, realistic visual prototypes
MJF Plastic PA12	Nylon 12 (HP 3D High Reusability PA 12)	MJF	MJF PA12 is HP's nylon 12 plastic with excellent mechanical properties and a smooth, finished and semi-glossy surface, making it an ideal choice for a wide range of applications from industrial parts to high quality finished goods.	Gray Black Black Smooth		2 - 20 BD	Strong and durable, Complex geometry, Thin features functional, Watertight, Good chemical resistance, Professional finish, Skin safe.	Mechanical & structural parts, mounts, cases, eye frames, tech accessories, drone parts, prosthetics.
MJF Plastic PA12GB	Nylon 12 Glass Bead filled (HP 3D High Reusability PA 12 Glass Beads)	MJF	PA 12GB is HP's nylon 12 plastic infused with glass beads that improve product stiffness and structural integrity. This material is 40% glass-filled which reduces warping during the printing process and over the product's life. PA12 Glass Beads is great for functional parts that require high strength and dimensional accuracy.	Gray Dark Gray		10 - 20 BD	Good dimensional stability, High stiffness, Complex geometry, Thin features functional, Watertight, Good chemical resistance, Skin safe.	Housings, enclosures, jigs and fixtures.
Nylon 6 Mineral Filled	Nylon 6 Mineral Filled (Ultrasint PA6 MF)	SLS	Nylon 6 Mineral Filled, Ultrasint® PA6 MF is an excellent choice for applications where high stiffness, strength, and heat stability are key requirements. The 'mineral-filled' reinforcement embedded in the polymer particles of Ultrasint® PA6 MF leads to isotropic properties, similar to those of injection molded parts. Parts printed with Ultrasint® PA6 MF also feature superior stiffness, enhanced impact strength, and excellent heat stability.	Natural		11 - 18 BD	High strength & rigidity, Very high HDTs, High isotropic rigidity	Engine bay parts, Media flow and storage parts (i.e. oil), Housings and covers, Tooling equipment & molds, Multi-purpose industrial goods
PA11	Nylon 11 (PA 1101)	SLS	PA11 is a biocompatible nylon material that is durable and flexible, making it optimal for use in exterior medical applications. Our PA11 is printed using SLS technology, which uses a laser to sinter nylon powder into plastic layer by layer. It is tensile, durable, and impact resistant with high elongation at break. PA11 is offered in a natural white finish.	Natural		2 - 22 BD	Chemical Resistant, High Elasticity, High Elongation, High Impact Resistance, Materials are made from renewable raw materials (castor oil), better temperature resistance than PA 12.	Living hinges, automotive applications, engineering parts, sporting goods, thin-walled parts, ducting parts.
Polypropylene	Polypropylene (HP High Reusability PP enabled by BASF)	MJF	Polypropylene (PP) is versatile and ideal for a wide range of automotive, consumer, industrial, and medical applications. This material offers excellent chemical resistance, low moisture absorption, and long-term durability. The versatility of this PP material enables the production of prototypes and final parts offering the same properties as PP for injection molding.	Natural		8 - 15 BD	High ductility, Excellent chemical resistance, low moisture absorption	Piping and fluid systems, Containers, Ideal for automotive (interior, exterior and under-the-hood)

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Sandstone	Gypsum	Binder jetting	Full Color Sandstone offers multi-color printing, making it the best material for figurines, architecture, medical models and other applications that require many colors.	Natural Glossy		8 - 22 BD	Full color, complex geometry, multiple finishes.	Figurines, architecture, terrain, scans, art sculptures, avatars.
TPU	Thermoplastic Polyurethane	SLS	Thermoplastic Polyurethane, or TPU, is an industry-standard flexible, rubber-like material that is great for elastic end-use products. Printed using Selective Laser Sintering (SLS), a robust process that solidifies material layer-by-layer, TPU parts are durable and can include interlocking features.	Natural		13 - 23 BD	Skin-friendly, Good Impact Resistance, Durable, Flexible, Highly Elastic, Interlocking parts.	Gaskets, sealings, grips.
Versatile Plastic	Nylon 12 (PA 2200)	SLS	Versatile Plastic is a durable nylon plastic that can be used for a wide range of applications, both for prototyping and for end products. Printed using Selective Laser Sintering (SLS), when thin, it's flexible enough for hinges and springs and when thick, it's strong enough for structural components.	Natural Processed Premium Smooth		3 - 18 BD	Fast delivery, strong and durable, affordable, many colors, skin safe, good chemical resistance, interlocking, complex geometry.	Cases, mechanical parts, prosthetics, fixtures, tech accessories, art home decor, jewelry, prototypes, figurines.

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Aluminum	Aluminum	DMLS	Aluminum is a light and strong material recommended for functional parts requiring high strength, stiffness, low weight and high accuracy.	Natural		15 - 25 BD	Strength, lightweight, good dimensional accuracy, corrosion resistant.	Mechanical parts, Tools and Fixtures, Structural Components.
Steel	420 Steel / Bronze (60:40)	Binder jetting	Steel is an affordable and strong metal that is 60% steel and 40% bronze and can range in color from a silver gray to reddish bronze. It is strong enough for metal parts like bottle openers and dice, but is not recommended for industrial load bearing applications.	Matte Polished		5 -22 BD	Good strength, multiple finishes, complex geometry.	Tools & Accessories, Dice, Home Decor, Small Sculptures.
Stainless Steel 316L	Stainless Steel 316L	Binder jetting	Stainless Steel 316L is manufactured using ExOne's "Triple Advanced Compaction Technology" with a binder jetting system. Unlike our Steel that is steel infused with bronze, this material is a single alloy, 100% Stainless steel 316L.	Natural Polished		15 - 25 BD	Corrosion Resistance, Easily Machined and Polished, high tensile strength at high temperatures, skin friendly, UV stable.	Mechanical applications, tooling, mold creation, chemical processing, fasteners, mounting brackets.
Stainless Steel 17-4PH	Stainless Steel 17-4PH	Binder jetting	Stainless Steel 17-4 PH is highly used in many industrial applications. It is known for its good corrosion resistance and high levels of strength and hardness. It is silver in color and has a granular finish that can be polished. Stainless Steel is manufactured using Binder Jetting Technology (BJT) from Desktop Metal. Unlike our Steel offering that is infused with bronze, this material is a single alloy, 100% Stainless steel.	Processed		15 - 21 BD	Corrosion resistance, Easily machined and polished, High levels of strength and hardness	Fasteners, Mounting Brackets, Chemical processing, Pump components, Jigs and fixtures
Bronze	Wax Casting	Casting	Bronze is a copper-tin alloy with a deep red color (similar to rose gold) commonly used in jewelry, accessories, and home decor.	Natural Polished		3 - 23 BD	High quality, professional finish, high level of detail, interlocking.	Jewelry, fashion accessories, home decor, prototypes, miniatures.
Brass	Wax Casting	Casting	Brass is a copper alloy containing 15% zinc, 5% tin and 80% copper and is capable of showcasing intricate details and offers a professional, finished look and feel. Brass will tarnish over time, but can be polished back to achieve a like-new surface.	Natural Polished		4 - 23 BD	High quality, professional finish, high level of detail, interlocking.	Jewelry, fashion accessories, home decor, prototypes, miniatures.
Copper	Wax Casting	Casting	Copper is 100% copper formed through a lost wax casting process. It has a red-orange color that oxidizes over time turning the surface a darker brown, blue, or greenish color depending on the environment.	Natural Polished		8 - 22 BD	Good electrical & thermal conductivity, Capable of intricate details, corrosion resistant.	Heat exchangers, marine accessories, home decor, prototypes.
Gold Plated Brass	Wax Casting	Casting	Gold Plated Brass is plated with 14K or 18K gold (depending on your choice) and is available in both yellow and rose colors.	14 K 18 K		10 - 23 BD	High quality, professional finish, high level of detail, interlocking.	Jewelry including bracelets, pendants, rings, cufflinks, and tie bars.
Gold	Wax Casting	Casting	Gold is our premium metal, available in yellow, white and rose colors and 14K and 18K.	14 K 18 K		4 - 19 BD	Precious metal, high quality material, professional finish, high level of detail, interlocking, long term wear, skin friendly.	Jewelry including bracelets, pendants, rings, cufflinks, and tie bars.
Platinum	Wax Casting	Casting	Platinum is capable of showcasing intricate details and offers a professional, finished look and feel. Platinum consists of 95% Platinum and 5% Ruthenium.	N/A		4 - 23 BD	Precious metal, high quality material, professional finish, high level of detail, interlocking, long term wear, skin friendly.	Jewelry including bracelets, pendants, rings, cufflinks, and tie bars.
Rhodium Plated Brass	Wax Casting	Casting	Rhodium Plated Brass offers a shiny, mirror-like finish that is popular for both Men and Women's jewelry.	N/A		11 - 23 BD	High quality, professional finish, high level of detail, interlocking.	Jewelry including bracelets, pendants, rings, cufflinks, and tie bars.
Silver	Wax Casting	Casting	Sterling Silver (92.5% silver) is a high quality silver alloy commonly used in jewelry and other skin-safe applications.	Natural, Polished, Fine Detail, Polished Antique		3 -22 BD	High quality, professional finish, high detail, good electrical conductivity, long-term wear, precious metal, skin friendly, interlocking.	Jewelry including bracelets, pendants, rings, cufflinks, and tie bars.