

# Materials Guide

Click the material name to learn more.



Material Name	Material	Technology	Description	Finishes	Colors	Lead Time	Advantages/Value Props	Applications
<b>Accura 60</b>	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.
<b>Accura Xtreme</b>	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.
<b>Accura Xtreme 200</b>	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.
<b>Fine Detail Plastic</b>	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.
<b>MJF Plastic PA12</b>	Nylon 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.
<b>MJF Plastic PA12GB</b>	Nylon 12 Glass Bead filled	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.
<b>Multi-Color Polyjet</b>	Vero	Polyjet	Multi-Color Polyjet is a rigid plastic material printed on the Stratasys J750 printer. The printer uses Polyjet technology to print in multiple Vero materials, including a clear plastic, to achieve 500,000 color combinations for translucent or opaque, full-color products.	N/A		8 - 20 BD	Full Color, Smooth Surface, Very High Detail.	Figurine, medical models, architecture, terrain models, realistic visual prototypes.
<b>PA11</b>	Nylon 11	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.
<b>Sandstone</b>	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.
<b>TPU</b>	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.
<b>Versatile Plastic</b>	Nylon 12	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		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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# SHAPEWAYS

Material Name	Material	Technology	Description	Finishes	Colors	Lead Time	Advantages/Value Props	Applications
<b>EPU 40</b>	Elastomeric Polyurethane	DLS	EPU 40 is an elastomeric material. Its combination of tear strength, energy return, and elongation makes it perfect for cushioning, impact absorption, vibration isolation, gaskets, and seals. EPU 40 is especially well-suited for producing elastomeric lattices to create foam-like product experiences.	Natural		7 - 10 BD	High Tear Strength , Highly Elastic.	Prototyping, gaskets, seals, vibration isolation, cushioning, foam-like products.
<b>RPU 70</b>	Rigid Polyurethane	DLS	Rigid Polyurethane is a very versatile, rigid material. It is used across a wide range of industries, including consumer products, automotive, and industrial. RPU 70 has a UL 94 HB flame resistance classification.	Natural		7 - 10 BD	High Toughness, Heat resistant, Rigid, High Strength.	Casings, housings, mounts, automotive parts, prosthetics, industrial parts, consumer products.
<b>UMA 90</b>	Urethane Methacrylate	DLS	UMA 90 is a rigid resin similar to conventional SLA resins. It is well suited for producing prototyping material, jigs, fixtures, and general prototypes.	Natural		7 - 10 BD	Rigid, Good Toughness.	Impellers, clips, propellers figurines, protptypes, jigs and fixtures.
<b>Aluminum</b>	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.
<b>Steel</b>	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.
<b>Stainless Steel 316L</b>	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 firendly, UV stable.	Mechanical applications, tooling, mold creation, chemical processing, fasteners, mounting brackets.
<b>Bronze</b>	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.
<b>Brass</b>	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.
<b>Copper</b>	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.
<b>Gold Plated Brass</b>	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.
<b>Gold</b>	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.
<b>Platinum</b>	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.
<b>Rhodium Plated Brass</b>	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.
<b>Silver</b>	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.