

# PolyJet™ Materials



## The Power Behind Your 3D Printer

With hundreds of materials to choose from, PolyJet 3D Printing gives you highly realistic, functional 3D models.

PolyJet materials are capable of simulating properties ranging from rubber-like to transparent and even engineering plastics combining high toughness and heat resistance.

With PolyJet, designers and engineers can create highly accurate, finely detailed models to answer the prototyping needs of virtually any industry.



# PolyJet Materials

## Create Flawless Models

### Meeting Your Precise Requirements

PolyJet materials combine a wide variety of properties with high resolution, so you can print the most realistic models.

### Unrivalled Productivity

PolyJet materials produce fully cured models that can be handled immediately after printing, with no need for lengthy post-processing. 3D models made with PolyJet feature smooth surfaces and fine details. They can be easily machined, drilled, chrome plated, glued or used as a mold.

## 3D Print With Hundreds of Digital Materials

Connex™ 3D Printers offer the unique ability to print in color and multiple materials in a single build.

Digital materials are composites created by simultaneously jetting up to three distinct PolyJet materials. They are combined in specific concentrations to provide unique mechanical properties, such as:

- Rubber-like flexibility: Print a whole range of different Shore A values, from Shore A 27 to 95, to simulate various elastomers.
- Toughness: Print various rigid materials ranging from standard plastics to the toughness and temperature resistance of ABS or engineering plastics.
- Color and patterns: Print a wide variety of vibrant colors or create your prototype with dots, grids and patterns. The Objet500 Connex3 prints a wide range of opaque and transparent color options available in both rigid and rubber-like material properties, plus rigid grays with a sleek, reflective sheen.

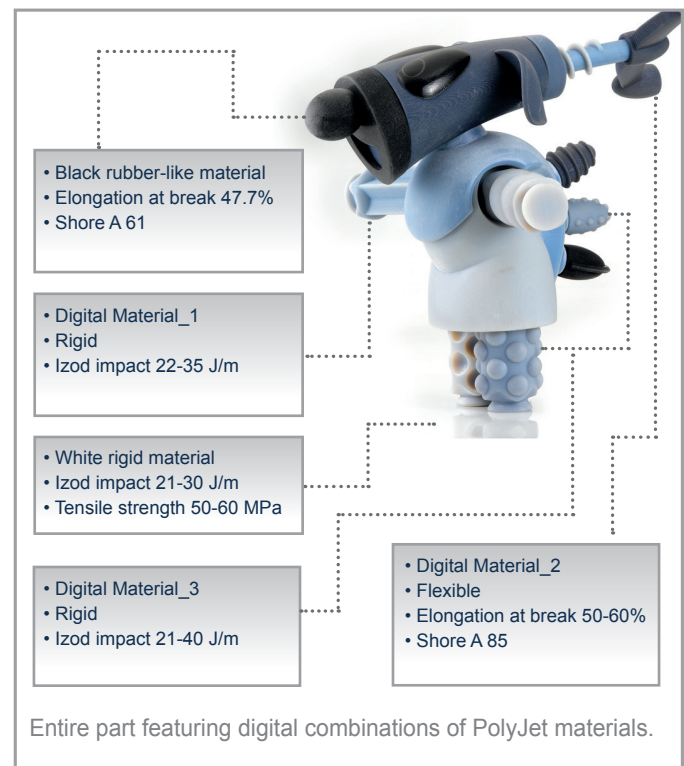
### Easily Remove Supports

PolyJet support material enables the production of models with an array of complex geometries, including overhangs and undercuts. With no hard edges to scrape or chemical baths to use, the gel-like support structure is easily and quickly removed with a water jet.

### Environment

PolyJet materials are REACH compliant and environmentally safe. They are delivered in fully sealed 1kg, 2kg or 3.6kg cartridges that are easy to use and replace.

## PolyJet Digital Materials



# PolyJet Material Families

## PolyJet Engineering Plastics

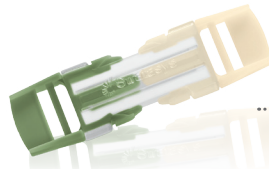
High Temperature



Digital ABS™



Digital ABS2™



## PolyJet Standard Plastics

Transparent



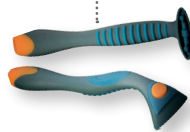
Rigid opaque



Simulated Polypropylene



PolyJet rubber



Medical\*



\* See the website and medical brochure for more information on medical materials, hearing aids, dental and biocompatible applications.

\*\* This material has received 4 medical approvals: Cytotoxicity, Irritation, Sensitization and USP Plastic Class VI. It is the responsibility of the device manufacturer to determine the suitability of the component parts and materials used in its finished products.

## PolyJet Transparent Plastics

Transparent PolyJet material lets you prototype clear and tinted products from eyewear and light covers to medical devices.

VeroClear™ is a rigid, colorless material featuring great dimensional stability. Ideal for simulating PMMA.

RGD720 is PolyJet's original multi-purpose transparent material for standard plastic simulation.

### PolyJet Transparent Shades and Patterns

With Objet500 Connex3 you can combine VeroClear with cyan, yellow or magenta materials for stunning transparent shades and unprecedented product realism.

Combining transparent with color and PolyJet rubber materials also enables the creation of different artistic patterns.

#### Ideal for:

- Form and fit testing of see-through parts like: glass consumer products, eye-wear, light covers and cases
- Visualization of liquid flow
- Medical applications
- Artistic and exhibition modeling



## PolyJet Rigid and Opaque Plastics

PolyJet rigid opaque materials give you brilliant color and includes VeroCyan™, VeroMagenta™, VeroYellow, VeroWhitePlus™, VeroGray™, VeroBlue™ and VeroBlackPlus™.

Incorporate as many as 46 vibrant colors into one 3D model for unprecedented design freedom. Or combine rigid and PolyJet rubber materials for overmolding, soft touch handles and more.

With Connex3 technology, you can also print in a wide range of rigid grays with a sleek, reflective luster – perfect for consumer electronic and automotive prototypes.

#### Ideal for:

- Fit and form testing
- Moving parts and assembled parts
- Sales, marketing and exhibition models
- Assembly of electronic components
- Silicon molding



## PolyJet Polypropylene

Endur™ is an advanced simulated polypropylene photopolymer offered in a bright white color, with improved toughness, increased dimensional stability and great surface finish.

DurusWhite™ is ideal for simulating the flexibility, strength and toughness of Polypropylene. Properties include Izod notched impact of 44 J/m, elongation at break of 44% and flexural modulus of 1026 MPa.

#### Ideal for:

- Reusable containers and packaging
- Flexible, snap-fit applications and living hinges
- Toys, battery cases, laboratory equipment, loudspeakers and automotive components





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## PolyJet Rubber

PolyJet rubber-like materials include TangoGray™, TangoBlack™, TangoPlus™ and TangoBlackPlus™. They offer various levels of elastomer characteristics: Shore scale A hardness, elongation at break, tear resistance and tensile strength that make it suitable for non-slip or soft surfaces on consumer electronics, medical devices and automotive interiors.

### Simulate Up To Nine Shore Values

#### Selected Digital Materials:

Combine rubber-like and rigid materials to simulate a variety of Shore A values from Shore A 27 to Shore A 95. Additional Shore values can be created by combining other rubber-like and rigid materials.

The Objet500 Connex3 enables users to print rubber-like materials in the widest range of vibrant opaque and transparent color options, and offers two new Shore A values: Shore A 30 and Shore A 35.

#### Ideal for:

- Rubber surrounds and overmolding
- Soft-touch coatings and nonslip surfaces
- Knobs, grips, pulls, handles, gaskets, seals, hoses and footwear
- Exhibition and communication models



## PolyJet High Temperature Plastics

High Temperature material (RGD525) has exceptional dimensional stability for thermal function testing of 3D models. The material has a heat deflection temperature (HDT) of 63-67 °C (145-153 °F) upon removal from the printer which can be increased to 75-80 °C (167-176 °F) after thermal post-treatment in a programmable oven.

### Simulate High Temperature Parts With Improved Functional Performance:

Combine High Temperature material with PolyJet rubber materials to produce varying Shore A values, gray shades and rigid functional materials featuring higher temperature resistance. In addition, produce high temperature parts featuring overmolding.

#### Ideal for:

- Form, fit and thermal functional testing
- High-definition models requiring excellent surface quality
- Exhibition models that endure strong lighting conditions
- Post-processing including painting, gluing, or metallization processes
- Taps, pipes and household appliances
- Hot air and hot water testing



## PolyJet Digital ABS

Our Digital ABS family offers toughness combined with exceptional dimensional stability. This material is offered in green and ivory and is fabricated from two base materials: RGD515 and RGD535 Green or RGD531 Ivory.

It is designed to simulate ABS engineering plastics by combining strength with high-temperature resistance.

Digital ABS is suitable for simulating parts that require high impact resistance and shock absorption with its impact resistance of 65-80J/m (1.22-1.5 ft lb/inch) and a heat deflection temperature of (HDT) of 58-68 °C (136-154 °F). A higher HDT of 82-95 °C (179-203 °F) can be achieved after thermal post-treatment in a programmable oven using different temperature profiles.

Digital ABS2 offers additional enhanced dimensional stability for thin-walled parts.

With Connex3 technology, you can 3D print parts using Digital ABS and one other material, allowing for the creation of rubber overmolded parts with Digital ABS and Digital ABS material combinations with color accents or clear features. Plus, there are 12 new flexible digital materials, combining Digital ABS with TangoPlus or TangoBlackPlus, ranging from Shore A 27-95.

#### Ideal for:

- Functional prototypes
- Snap-fit parts for high or low temperature usage
- Electrical parts, casings, mobile telephone casings
- Engine parts and covers



## Objet® 3D Printers by Stratasys

Objet 3D Printers by Stratasys make prototypes with superior surface quality and ultrahigh resolution, down to 16 micron layers.

Giving you hundreds of material combinations, Objet 3D Printers represent the most practical precision prototyping solution available - with unmatched versatility for designers, engineers and manufacturers in virtually any industry. Stratasys 3D Printers are used by world leaders in many industries, including: consumer goods, consumer electronics, defense, automotive, dental, education, architecture, medical and medical devices, hearing aids, animation and entertainment, industrial machinery, jewelry, sporting goods, toys and service bureaus.



# PolyJet Materials

## Our Awards



CNBC European Business Magazine Names Objet Among Europe's 25 Most Creative Companies 2010



Plastol 2009 award for recognition of outstanding product: Alaris30



Material of the Year 2009 Honorable Mentions



2008 RedTech USA Emerging Technologies Award For Objet Connex500



Red Dot Design Awards 2008 for Objet Connex500



Frost & Sullivan Award for Product Innovation 2008



Desktop Engineering 2008 for Objet technology



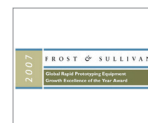
Desktop Engineering 2007 for Digital Materials



NASA Tech Brief 2007 for Objet Connex500



EuroMold Gold Award 2007 for Objet Connex500



Frost & Sullivan 2007 for superior performance in rapid prototyping industry



Desktop Engineering 2006 for Objet Eden500V

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