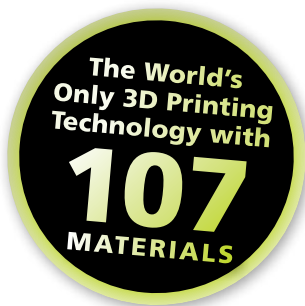


With courtesy of Neri Oxman

## Objet Materials

## The Power behind your 3D Printer



With a choice of over 100 materials, including 90 Digital Materials, Objet's 3D printing solutions enable highly realistic visual and functional simulation for Rapid Prototyping purposes.

Objet's materials are capable of simulating properties ranging from varying grades of rubber all the way to clear transparent glass and engineering plastics combining high toughness and high temperature resistance.

Using Objet's materials, designers, manufacturers and engineers can create highly accurate, finely detailed models and parts to answer the Rapid Prototyping needs of virtually any industry.



# Create Flawless Models with Objet Materials

## Meeting your Precise Application Requirements

Objet provides a wide variety of materials offering transparent, colored, opaque, flexible, rigid, high temperature and high toughness properties. These materials are designed to answer the visual and verificational requirements of designers and engineers in every industry.

## Unrivalled productivity

Based upon proprietary, acrylic-based photopolymer technology, Objet's materials produce fully-cured models that can be handled immediately after printing, with no need for lengthy post-processing.

Models and parts made from Objet materials feature smooth surfaces and fine details. They can readily absorb paint and can be easily machined, drilled, chrome-plated, glued or used as a mold.

## Ease of use

Objet Support material, used in combination with any Objet material, enables the design and production of models with an unlimited array of complex geometries, including overhangs and undercuts. With no hard edges to scrape or chemical baths to use, the gel-like support is easily and quickly removed with a water-jet.

## Environment

Objet materials are environmentally safe, being REACH compliant. They are delivered in fully sealed 1kg, 2kg or 3.6kg cartridges that are simple to use, change over and replace.


# Your Choice of 90 Digital Materials!

The Objet Connex™ 3D printing system offers users the unique ability to fabricate 90 different Digital Materials, with up to 14 different materials within any single printed part.

Digital Materials are composite materials created by simultaneously jetting two different Objet materials. The two are combined in specific concentrations and structures to provide unique mechanical properties and to provide a closer look, feel and function of the desired end-product.

- Simulate rubber – Print a whole range of different Shore A values including Shore 27, 40, 50, 60, 70, 85 and 95, to simulate various elastomers and rubber products.
- Simulate toughness – Print various rigid materials ranging from standard plastics to the toughness and temperature resistance of ABS or engineering-plastics.
- Create shades and patterns – Print various shades of rigid opaque materials and mix transparent and rigid opaque materials to create shades, dots, grids and patterns.

## Objet Digital Materials™



- **Black Rubber like material**
  - Elongation at break 47.7%
  - Shore A 61
- DM\_1
  - **Rigid**
  - Izod Impact 22-35 J/m
  - Color: Gray40
- **White Rigid material**
  - Izod Impact 21-30 J/m
  - Tensile Strength 50-60 MPa
- DM\_3
  - **Rigid**
  - Izod Impact 21-40 J/m
  - Color: Gray60
- DM\_2
  - **Flexible**
  - Elongation at break 50-60%
  - Shore A 85
  - Color: Black

All part based on digital combinations of Objet materials.

# Objet Material Families

## Simulating Engineering Plastics

High Temperature



ABS-like



## Simulating Standard Plastics

Transparent



Rigid opaque



Polypropylene-like



Rubber-like



Medical\*



- \* See the Objet website & medical brochure for more information on materials for medical, hearing aids, dental and biocompatible applications.
- \*\* This material have 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 all the component parts and materials used in its finished products.
- \*\*\* Objet Bio-Compatible material is suitable for applications requiring prolonged skin contact of over 30 days and short term mucosal-membrane contact of up to 24 hours. The material has five medical approvals according to the harmonized standard ISO 10993-1: Cytotoxicity, Genotoxicity, Delayed Type Hypersensitivity, Irritation and USP Plastic Class VI. It is the responsibility of the device manufacturer to determine the suitability of all the component parts and materials used in its finished products

## Simulate Standard Plastics – Transparent

**Objet FullCure720™** is Objet's original multi-purpose transparent material for standard plastics simulation.

**Objet VeroClear™** is a rigid, colorless material featuring great dimensional stability for general purpose, fine detail model building and visual simulation of transparent thermoplastic such as PMMA.

### Simulate Transparent Shades and Patterns Selected Digital Materials –

Combining Objet's transparent and black (rigid and rubber-like) materials enables the creation of different artistic patterns, (Objet DM\_dots\_7513 and DM\_grid\_7523), various transparent shades and Shore A values for simulating general purpose and polypropylene-like plastics.

#### Ideal for:

- Form and fit testing of clear or see-through parts
- Glass, eye-wear, lighting covers and light-cases
- Visualization of liquid flow
- Color dyeing
- Medical applications
- Artistic and exhibition modeling



## Simulate Standard Plastics – Rigid & Opaque

Objet's family of rigid opaque materials includes Objet VeroWhitePlus™, Objet VeroGray™, Objet VeroBlue™ and Objet VeroBlackPlus™.

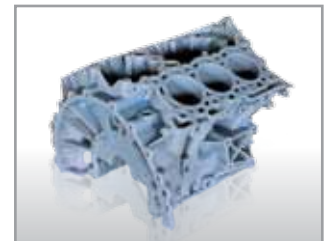
Combining dimensional stability and high-detail visualization, the Objet rigid opaque family is intended for standard plastics simulation and model creations that closely resemble the 'look' of the end product.

### Simulate Rigid, Opaque Shades Selected Digital Materials –

Combining Objet rigid opaque family and Objet rubber-like family of materials.

#### Ideal for:

- Wide range of fit and form testing
- Moving parts and assembled parts
- Exhibition and sales & marketing models
- Assembly of electronic components
- Objet VeroBlue™ is ideal for silicon molding



## Simulate Standard Plastics – Polypropylene

Objet DurusWhite™ material is ideal for a broad range of applications that require the appearance, 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.

### Simulate Polypropylene with Improved Thermal Resistance Selected Digital Materials –

Combining Objet rigid opaque family with Objet rubber-like materials and combining Objet DurusWhite™ material with Objet rigid opaque family of materials.

#### Ideal for:

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



## Simulate Standard Plastics – Rubber

Objet's family of rubber-like materials includes Objet TangoGray™, Objet TangoBlack™, ObjetTangoPlus™ and Objet TangoBlackPlus™. The family offers various levels of elastomer characteristics: Shore scale A hardness, elongation at break, tear resistance and tensile strength that make it suitable for a range of applications requiring non-slip or soft surfaces on consumer electronics, medical devices and automotive interiors.

### Simulate 6 Different Shore Values

#### Selected Digital Materials –

Combining – Objet TangoBlackPlus™ or ObjetTangoPlus™ and Objet VeroWhitePlus™ / VeroClear™ to simulate 6 levels of different Shore Scale A values from Shore 40 to Shore 95, with increasing tensile strength and tear resistance.

Additional Shore values can be created by combining other Objet rubber-like and Objet rigid materials.

#### Ideal for:

- Exhibition and communication models
- Rubber surrounds and over-molding
- Soft-touch coatings and non-slip surfaces
- Knobs, grips, pulls, handles, gaskets, seals, hoses, footwear



## Simulate Engineering Plastics – High Temperature\*

Objet High Temperature material (RGD525) has exceptional dimensional stability for thermal function testing of static 3-D 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

#### Selected Digital Materials –

Combine Objet High Temperature Material with Objet rubber-like materials to produce varying Shore A values, gray shades and rigid functional materials featuring higher temperature resistance. In addition, produce high temperature parts featuring over-molding.

#### Ideal for:

- Form, fit and thermal functional testing of static parts
- High-definition parts requiring excellent surface quality
- Exhibition modeling under strong lighting conditions
- Post-processing including painting, gluing, or metallization processes
- Models in transit
- Taps, pipes and household appliances
- Hot air and hot water testing



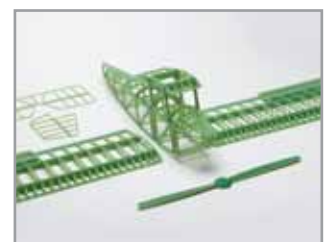
## Simulate Engineering Plastics – ABS\*

Objet ABS-like digital material (RGD5160 – DM) is fabricated from RGD515 and RGD535. It is designed to simulate ABS engineering plastics by combining high-temperature resistances with high toughness. Objet ABS-like digital material is suitable for any simulated parts that require high-impact resistance and shock-absorption.

Objet ABS-like material has a high impact resistance of 65-80J/m (1.22-1.5 ft lb/inch) and a heat deflection temperature (HDT) of 58-68 °C (136–154 °F) upon removal from the printer. 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.

#### Ideal for:

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



# Objet Family of 3D Printing Systems

Objet's advanced 3D printers enable the fast and efficient production of prototypes featuring superior surface quality and ultra-high resolution, down to 16 micron layers.

When combined with Objet's range of over 100 materials, Objet's 3D printing systems represent the most practical rapid prototyping solution available - with unmatched versatility for designers, engineers and manufacturers in virtually any industry.

Objet has thousands of customers including many of the relevant Fortune 100 companies.

Objet systems are in use by world leaders in many industries, such as consumer goods, consumer electronics, defense, automotive, dental, education, architecture, medical & medical devices, hearing aids, animation & entertainment, industrial machinery, jewellery, sporting goods, toys, service bureaus.

**Objet Eden Family**



**Objet Desktop Family**

**Objet Connex Family**



# 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

\* For existing customers: operating this material requires the installation of an upgrade kit to Objet 3D Printer. To order contact your Objet Regional Customer Support Manager.

Objet Geometries Ltd. ("Objet") does not guarantee the final release and availability of materials, products and/or features referred to herein. Materials will be released subject to Objet's sole discretion. Not all released materials are currently available for all platforms/systems. Objet will update its website further as releases become available and/or compatible with specific platforms/systems.

## ABOUT OBJET

Objet Ltd., is a leading provider of high quality, cost effective inkjet-based 3D printing systems and materials. A global company, Objet has offices in North America, Europe, Japan, China, Hong Kong, and India.

Objet's 3D printing systems and 3D printing materials are ideal for any company involved in the manufacture or design of physical products using 3D software or other 3D content. Companies using Objet's solutions can be typically found in sectors such as consumer goods & electronics, aerospace & defense, automotive, education, dental, medical and medical devices, architecture, industrial machinery, footwear, sporting goods, toys and service bureaus.

Founded in 1998, the company has thousands of customers worldwide including a substantial share of the relevant Fortune 100 and Fortune 500. Its award-winning technology (13 awards in 8 years) is based upon over 110 patents and patent pending inventions.

Objet's advanced 3D printing systems and range of over 100 materials enable professionals to build prototypes that accurately simulate the true look, feel and function of an end-product, even complex, assembled goods.

The Objet Connex™ line of multi-material 3D printers features the world's only technology to simultaneously jet 2 materials. With this, users can print many different materials into a single part and print various mixed parts on the same build tray. Users can also create advanced composite materials, or Digital Materials™ featuring unique mechanical and thermal properties. Objet's range of over 100 3D printing materials simulate properties ranging from rigid to rubber-like, transparent to opaque and standard to ABS-grade engineering plastics, with a large number of in-between shore grades and shades.

Objet's 3D printers are available in a range of form-factors, from cost-effective desktop 3D printers ideal for entry-level professionals all the way to industrial-scale multi-material machines for front-line designers and top manufacturers. Objet's 3D printers feature the industry's highest-resolution 3D printing quality, based on 16-micron (0.0006 in.) super-thin layering, wide material versatility, office friendliness and ease of operation.

For more information, visit us at [www.objet.com](http://www.objet.com), and for more about 3D printing industry-related news, business issues and trends, read the Objet Blog.

Objet Ltd.  
Headquarters

T: +972-8-931-4314  
F: +972-8-931-4315

Objet Inc.  
North America

T: +1-877-489-9449  
F: +1-866-676-1533

Objet GmbH  
Europe

T: +49-7229-7772-0  
F: +49-7229-7772-990

Objet AP  
Asia Pacific

T: +852-3944-8888  
F: +852-217-40555

Objet Shanghai Ltd.  
China

T: +86-21-51750566  
F: +86-21-58362468

Objet Japan Co. Ltd.

T: +81-43-212-3302  
F: +81-43-212-3305

Objet AP  
India

T: +91-124-4696939  
F: +91-124-4696970

info@objet.com www.objet.com



Objet Blog



© 2012 Objet, Objet24, Objet30, Objet30 Pro, Objet Studio, Quadra, QuadraTempo, FullCure, SHR, Eden, Eden250, Eden260, Eden260V, Eden330, Eden350, Eden350V, Eden500V, Job Manager, CADMatrix, Connex, Objet260 Connex, Connex350, Connex500, Alaris, Alaris30, PolyLog, TangoBlack, TangoGray, TangoPlus, TangoBlackPlus, VeroBlue, VeroBlack, VeroBlackPlus, VeroClear, VeroDent, VeroGray, VeroWhite, VeroWhitePlus, Durus, Digital Materials, PolyJet, PolyJet Matrix, ABS-like and ObjetGreen are trademarks or registered trademarks of Objet Ltd. and may be registered in certain jurisdictions. All dfsqsd trademarks belong to their respective owners.

**OBJET**  
The Power to Create