

# Vero

The Vero™ family includes the rigid collection of materials. These multi-purpose materials are most widely used for visual models, engineering prototypes, product assemblies and RTV molding patterns. Rigid materials are good choices for light functional testing, patterns, prototypes and models.

Available in seven hues including blue, white, black, gray, cyan, magenta and yellow, the Vero family shares similar mechanical, thermal and electrical properties. The opaque medium shades of VeroBlue™ and VeroGray™ provide the best detail visualization, without glare or darkness. The opaque VeroVivid™ family of VeroCyanV™, VeroMagentaV™ and VeroYellowV™ offers more saturated and vibrant color. Vero PureWhite™ is twice as opaque, 20 percent brighter and more UV resistant than VeroWhitePlus™. DraftGrey™ is a low-cost alternative for single material printing with medium opacity and a smooth finish. Also available are transparent VeroClear™ and VeroUltraClear™, acrylic-simulating materials ideal for clear parts.

## Vero PureWhite, VeroBlackPlus, VeroCyan, VeroCyanV, VeroGray, DraftGrey, VeroMagenta, VeroMagentaV, VeroWhitePlus, VeroYellow, VeroYellowV, VeroClear, VeroUltraClear

	ASTM	Value
Tensile Strength	D-638-03	50 – 65 MPa (7,250 – 9,450 psi)
Elongation at Break	D-638-05	10 – 25%
Modulus of Elasticity	D-638-04	2,000 – 3,000 MPa (290,000 – 435,000 psi)
Flexural Strength	D-790-03	75 – 110 MPa (11,000 – 16,000 psi)
Flexural Modulus	D-790-04	2,200 – 3,200 MPa (320,000 – 465,000 psi)
HDT, °C @ 0.45MPa	D-648-06	45 – 50 °C (113 – 122 °F)
HDT, °C @ 1.82MPa	D-648-07	45 – 50 °C (113 – 122 °F)
Izod Notched Impact	D-256-06	20 – 30 J/m (0.375 – 0.562 ft-lb/inch)
Water Absorption	D-570-98 24hr	1.1 – 1.5%
Tg	DMA, E»	52 – 54 °C (126 – 129 °F)
Shore Hardness (D)	Scale D	83 – 86 (Scale D)
Rockwell Hardness	Scale D	73 – 76 (Scale M)
Polymerized Density	Scale M	1.17 – 1.18 g/cm <sup>3</sup>
Ash Content (VeroGray, VeroWhitePlus)	USP281	0.23 – 0.26%
Ash Content (VeroBlackPlus)	USP281	0.01 – 0.02%

# Vero

## VeroBlue

	ASTM	Value
Tensile Strength	D-638-03	50 – 60 MPa (7,250 – 8,700 psi)
Elongation at Break	D-638-05	15 – 25%
Modulus of Elasticity	D-638-04	2,000 – 3,000 MPa (290,000 – 435,000 psi)
Flexural Strength	D-790-03	60 – 70 MPa (8,700 – 10,200 psi)
Flexural Modulus	D-790-04	1,900 – 2,500 MPa (265,000 – 365,000 psi)
HDT, °C @ 0.45MPa	D-648-06	45 – 50 °C (113 – 122 °F)
HDT, °C @ 1.82MPa	D-648-07	45 – 50 °C (113 – 122 °F)
Izod Notched Impact	D-256-06	20 – 30 J/m (0.375 – 0.562 ft-lb/inch)
Water Absorption	D-570-98 24hr	1.5 – 2.2%
Tg	DMA, E <sub>2</sub>	48 – 50 °C (118 – 122 °F)
Shore Hardness (D)	Scale D	83 – 86 (Scale D)
Rockwell Hardness	Scale D	73 – 76 (Scale M)
Polymerized Density	Scale M	1.18 – 1.19 g/cm <sup>3</sup>
Ash Content	USP281	0.21 – 0.22%

## System Availability

Printer	Min Layer Thickness	Support Structure	Available Colors
Objet30 Pro™	28 microns (0.0011 in.)	SUP705 (WaterJet removable)	VeroBlackPlus™, VeroBlue, VeroGray, VeroWhitePlus
Objet30 Prime™	28 microns (0.0011 in.)	SUP705 (WaterJet removable), SUP706 (soluble)	VeroBlackPlus, VeroBlue, VeroGray, VeroWhitePlus
Eden260VS™	16 microns (0.0006 in.)	SUP705 (WaterJet removable), SUP706 (soluble)	VeroBlackPlus, VeroBlue, VeroGray, VeroWhitePlus
Objet260 Connex1™	16 microns (0.0006 in.)	SUP705 (WaterJet removable), SUP706 (soluble)	VeroBlackPlus, VeroBlue, VeroGray, VeroWhitePlus
Objet260 Connex3™	16 microns (0.0006 in.)	SUP705 (WaterJet removable), SUP706 (soluble)	VeroBlackPlus, VeroBlue, VeroCyan, VeroGray, VeroMagenta™, VeroMagentaV, Vero PureWhite, VeroWhitePlus, VeroYellow™, VeroYellowV

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System Availability			
Printer	Min Layer Thickness	Support Structure	Available Colors
Objet500 Connex1™	16 microns (0.0006 in.)	SUP705 (WaterJet removable), SUP706 (soluble)	VeroBlackPlus, VeroBlue, VeroGray, Vero PureWhite, VeroWhitePlus
Objet350/500 Connex3™	16 microns (0.0006 in.)	SUP705 (WaterJet removable), SUP706 (soluble)	VeroBlackPlus, VeroBlue, VeroCyan, VeroGray, VeroMagenta, VeroMagentaV, Vero PureWhite, VeroWhitePlus, VeroYellow, VeroYellowV
Objet1000 Plus™	16 microns (0.0006 in.)	SUP705 (WaterJet removable)	VeroBlackPlus, VeroBlue, VeroGray, Vero PureWhite, VeroWhitePlus
Stratasys J735™/ J750™	14 microns (0.00055 in.)	SUP705 (WaterJet removable), SUP706 (soluble)	VeroBlackPlus, VeroBlue, VeroCyan, VeroGray, VeroMagenta, Vero PureWhite, VeroYellow, VeroMagentaV, VeroYellowV, VeroCyanV, VeroClear
Stratasys J835™/ J850™/ J826™	14 microns (0.00055 in.)	SUP705 (WaterJet removable), SUP706B (soluble)	VeroBlackPlus, VeroBlue, VeroCyan, VeroGray, VeroMagenta, Vero PureWhite, VeroYellow, VeroMagentaV, VeroYellowV, VeroCyanV, VeroClear, VeroUltraClear, DraftGrey

For information on the Vero material properties on the J55™, please visit [www.stratasys.com/3d-printers/j55](http://www.stratasys.com/3d-printers/j55).

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