

Product Comparison

Technical Data

Product Description

VALOX™ 430 resin	33 % glass reinforced, impact modified. Connectors, etc.
VALOX™ IQ420 resin	Environmentally responsible Valox IQ420 resin: iQ-PBT+ 30% glass fiber reinforcement. Targeted for use in electrical motors, connectors, pump housings, spotlights, appliance handles, etc.

General	VALOX™ 430 resin	VALOX™ IQ420 resin
Manufacturer / Supplier	• SABIC Innovative Plastics	• SABIC Innovative Plastics
Generic Symbol	• PBT	• PBT
Material Status	• Commercial: Active	• Commercial: Active
Literature ¹	• Technical Datasheet	• Technical Datasheet
UL Yellow Card ²	• E121562-220794	• E121562-100072242
Search for UL Yellow Card	• SABIC Innovative Plastics • VALOX™	• SABIC Innovative Plastics • VALOX™
Availability	• North America	• North America
Filler / Reinforcement	• Glass Fiber Reinforcement, 33% Filler by Weight	• Glass Fiber Reinforcement, 30% Filler by Weight
Additive	• Impact Modifier	--
Recycled Content	--	• Yes
Features	• Impact Modified	--
Uses	• Connectors	• Appliance Components • Connectors • Electric Motor Housings • Electrical/Electronic Applications • Handles • Housings • Pump Parts
Automotive Specifications	• CHRYSLER MS-DB400 CPN2787 Color: 7001 Black • CHRYSLER MS-DB400 CPN3858 Color: 7001-8433 Non-matched Color • FORD WSK-M4D608-A • GM GMP.PBT.015 • GM GMP.PBTP.015	--
Processing Method	• Injection Molding	• Injection Molding
Multi-Point Data	• Shear DMA (ASTM D4065) • Specific Heat vs. Temperature (ASTM D3417) • Tensile Creep (ASTM D2990) • Tensile Fatigue • Tensile Stress vs. Strain (ASTM D638) • Thermal Conductivity vs. Temperature (ASTM E1530) • Viscosity vs. Shear Rate (ASTM D3835)	--

Physical	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	Test Method
Specific Gravity	--	1.52	g/cm ³	ASTM D792
	--	--	g/cm ³	ISO 1183
Specific Volume	0.650	--	cm ³ /g	ASTM D792
Melt Mass-Flow Rate (MFR)				ASTM D1238
250°C/2.16 kg	12	--	g/10 min	
250°C/5.0 kg	--	52	g/10 min	
Melt Volume-Flow Rate (MVR) (250°C/5.0 kg)	--	38.0	cm ³ /10min	ISO 1133

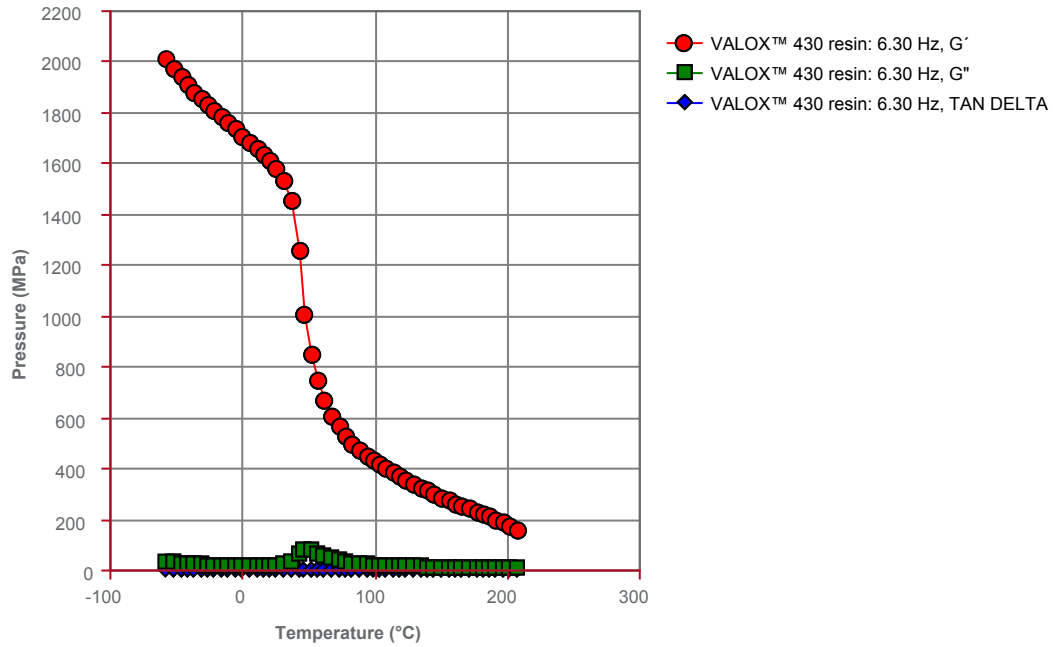
Product Comparison

Physical	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	Test Method
Molding Shrinkage				Internal Method
Flow ⁴	0.50 to 0.80	--	%	
Flow ⁵	0.30 to 0.50	--	%	
Flow : 3.20 mm	0.50	0.50 to 0.70	%	
Across Flow ⁶	0.60 to 0.90	--	%	
Across Flow ⁵	0.40 to 0.60	--	%	
Across Flow : 3.20 mm	--	0.80 to 1.0	%	
Water Absorption				
24 hr	0.050	0.10	%	ASTM D570
Saturation, 23°C	--	0.090	%	ISO 62
Equilibrium, 23°C, 50% RH	--	0.10	%	ISO 62
Mechanical	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	Test Method
Tensile Modulus				
-- ⁷	8670	11800	MPa	ASTM D638
--	--	10700	MPa	ISO 527-2/1
Tensile Strength				
Yield ⁸	--	114	MPa	ASTM D638
Yield	--	139	MPa	ISO 527-2/5
Break ⁸	106	114	MPa	ASTM D638
Break	--	139	MPa	ISO 527-2/5
Tensile Elongation				
Yield ⁸	--	2.2	%	ASTM D638
Yield	--	1.6	%	ISO 527-2/5
Break ⁸	3.1	2.2	%	ASTM D638
Break	--	1.6	%	ISO 527-2/5
Flexural Modulus				
50.0 mm Span ⁹	7810	9100	MPa	ASTM D790
-- ¹⁰	--	9100	MPa	ISO 178
Flexural Strength				
-- ^{10, 11}	--	210	MPa	ISO 178
Yield, 50.0 mm Span ⁹	--	210	MPa	ASTM D790
Break, 50.0 mm Span ⁹	174	189	MPa	ASTM D790
Impact	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	Test Method
Charpy Notched Impact Strength ¹² (23°C)	--	14	kJ/m ²	ISO 179/1eA
Notched Izod Impact				
-30°C	--	83	J/m	ASTM D256
23°C	130	82	J/m	ASTM D256
-30°C ¹³	--	8.0	kJ/m ²	ISO 180/1A
23°C ¹³	--	8.0	kJ/m ²	ISO 180/1A
Unnotched Izod Impact (23°C)	860	770	J/m	ASTM D4812
Instrumented Dart Impact				ASTM D3763
23°C, Total Energy	--	7.00	J	
Hardness	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	Test Method
Rockwell Hardness (R-Scale)	125	--		ASTM D785

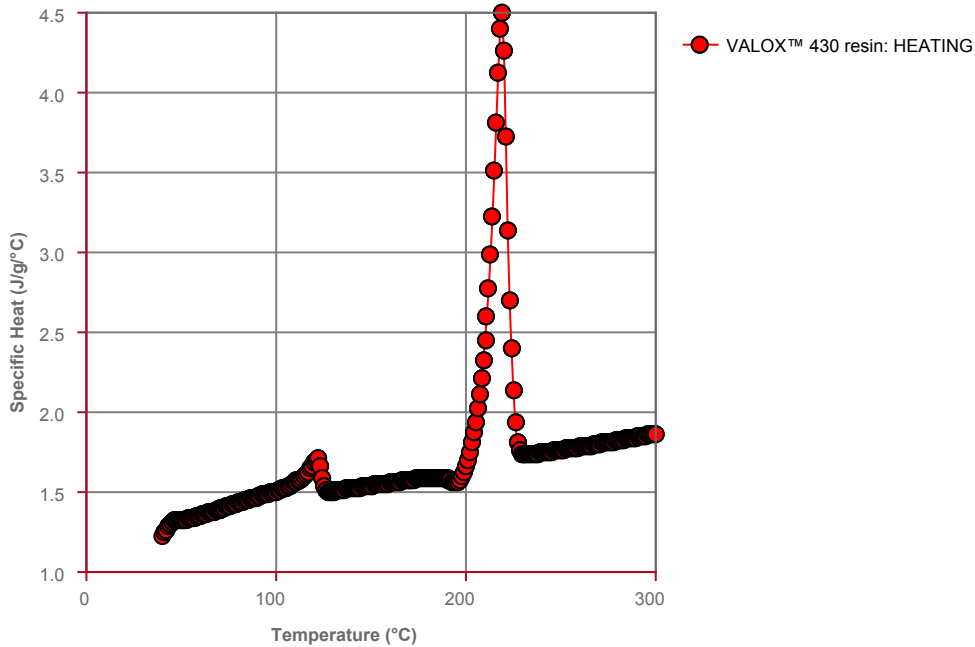
Product Comparison

Thermal	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed, 6.40 mm	223	--	°C	ASTM D648
0.45 MPa, Unannealed, 64.0 mm Span ¹⁴	--	217	°C	ISO 75-2/Bf
1.8 MPa, Unannealed, 3.20 mm	--	203	°C	ASTM D648
1.8 MPa, Unannealed, 6.40 mm	208	207	°C	ASTM D648
1.8 MPa, Unannealed, 64.0 mm Span ¹⁴	--	205	°C	ISO 75-2/Af
Vicat Softening Temperature	--	206	°C	ASTM D1525 ¹⁵ ISO 306/B50 ISO 306/B120
Ball Pressure Test ¹⁶ (200°C)	--	Pass		IEC 60695-10-2
CLTE				ASTM E831 ISO 11359-2
Flow : -40 to 40°C	--	0.000025	cm/cm/°C	
Transverse : -40 to 40°C	--	0.000089	cm/cm/°C	
RTI Elec	130	140	°C	UL 746
RTI Imp	130	140	°C	UL 746
RTI Str	140	140	°C	UL 746
Electrical	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	Test Method
Volume Resistivity	--	> 1.0E+15	ohm·cm	ASTM D257
Dielectric Strength (3.20 mm, in Air)	--	23	kV/mm	ASTM D149
Arc Resistance ¹⁷	PLC 5	--		ASTM D495
Comparative Tracking Index (CTI)	PLC 1	PLC 2		UL 746
High Amp Arc Ignition (HAI)	PLC 2	--		UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 0	PLC 2		UL 746
Hot-wire Ignition (HWI)	PLC 0	--		UL 746
Flammability	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	Test Method
Flame Rating				UL 94
0.840 mm	--	HB		
1.47 mm	HB	--		
Injection	VALOX™ 430 resin	VALOX™ IQ420 resin	Unit	
Drying Temperature	121	121	°C	
Drying Time	3.0 to 4.0	3.0 to 4.0	hr	
Drying Time, Maximum	12	12	hr	
Suggested Max Moisture	0.020	0.020	%	
Suggested Shot Size	40 to 80	40 to 80	%	
Rear Temperature	238 to 254	238 to 254	°C	
Middle Temperature	243 to 260	243 to 260	°C	
Front Temperature	249 to 266	249 to 266	°C	
Nozzle Temperature	243 to 260	243 to 260	°C	
Processing (Melt) Temp	249 to 266	249 to 266	°C	
Mold Temperature	65.6 to 87.8	65.6 to 87.8	°C	
Back Pressure	0.345 to 0.689	0.345 to 0.689	MPa	
Screw Speed	50 to 80	50 to 80	rpm	
Vent Depth	0.025 to 0.038	0.025 to 0.038	mm	

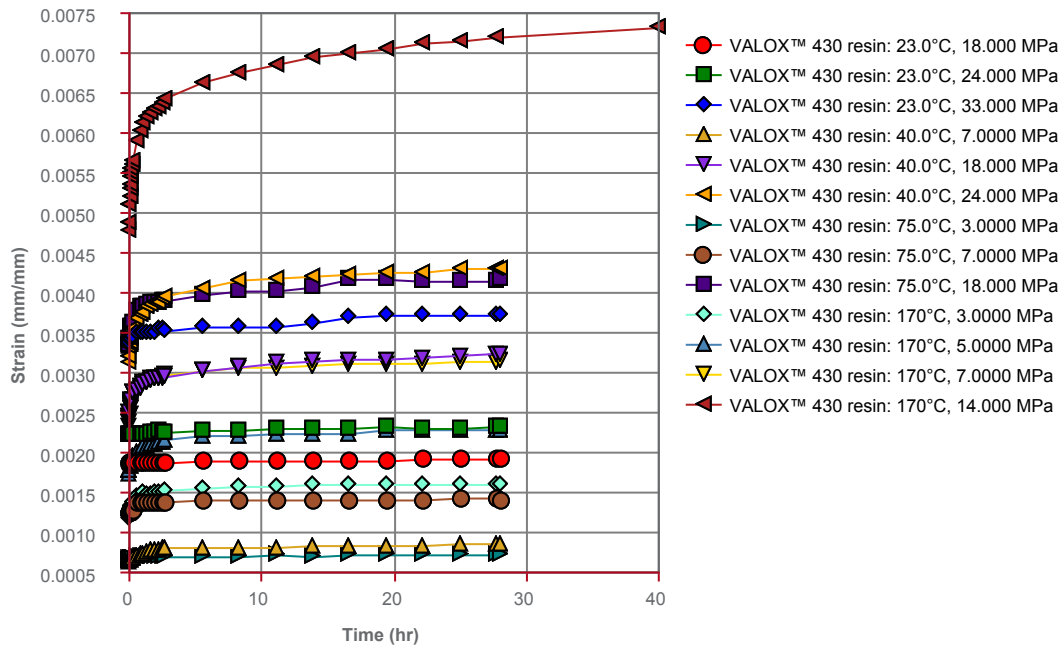
Shear DMA (ASTM D4065)



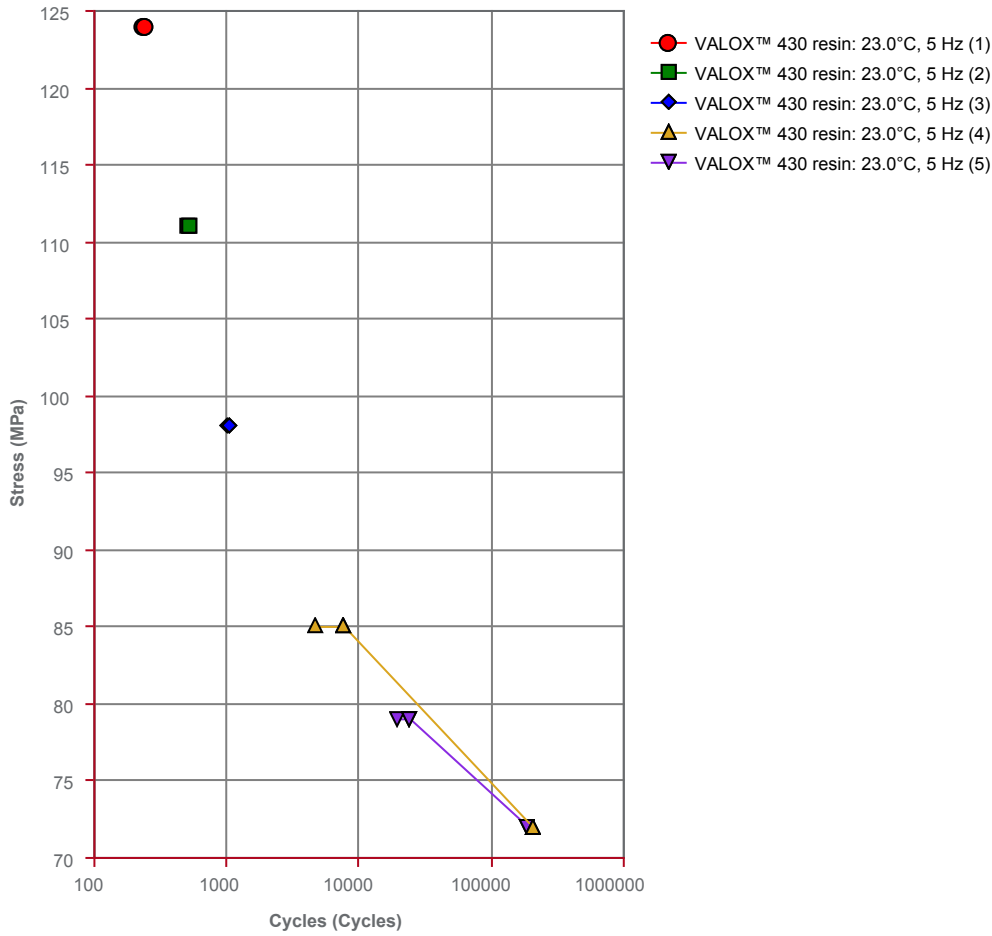
Specific Heat vs. Temperature (ASTM D3417)



Tensile Creep (ASTM D2990)



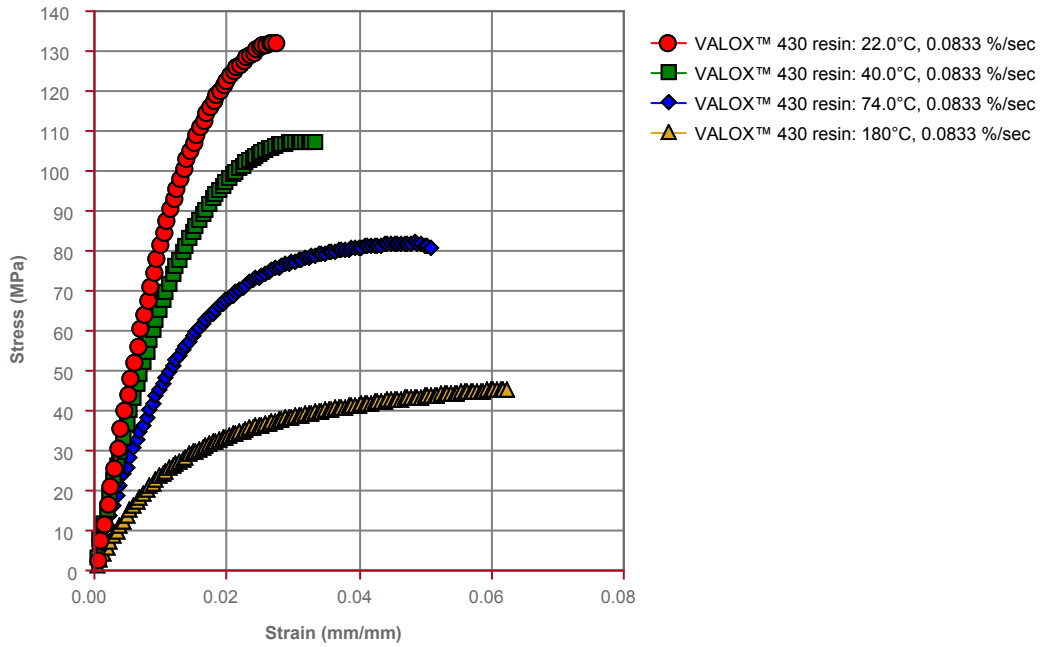
Tensile Fatigue



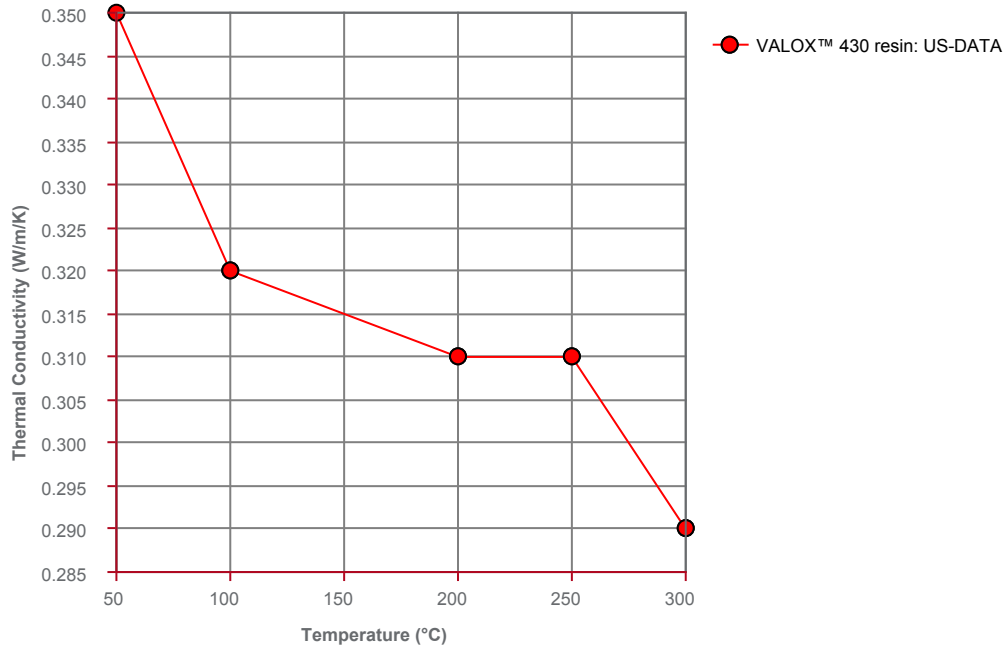
Data Notes

- (1) - Series 1
- (2) - Series 2
- (3) - Series 3
- (4) - Series 4
- (5) - Series 5

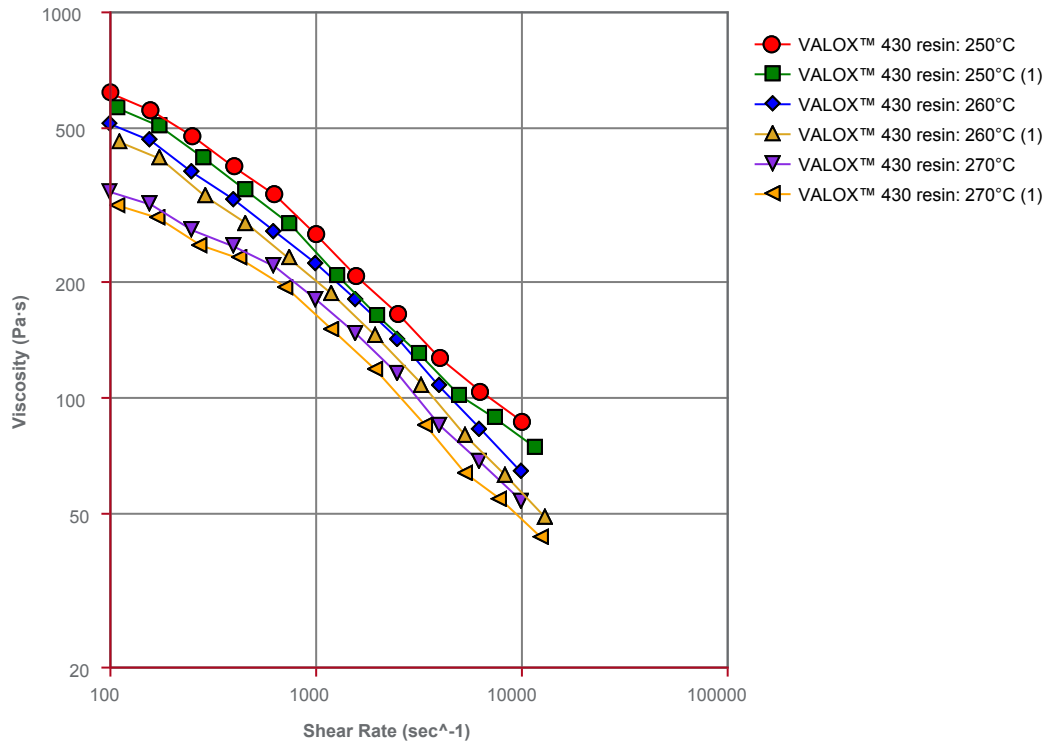
Tensile Stress vs. Strain (ASTM D638)



Thermal Conductivity vs. Temperature (ASTM E1530)



Viscosity vs. Shear Rate (ASTM D3835)



Data Notes

Notes(1) - Rab. Corrected Data

¹ These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

² A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL IDES continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

³ Typical properties: these are not to be construed as specifications.

⁴ 3.2 to 4.6 mm

⁵ 1.5 to 3.2 mm

⁶ 3.2-4.6 mm

⁷ 5.0 mm/min

⁸ Type I, 5.0 mm/min

⁹ 1.3 mm/min

¹⁰ 2.0 mm/min

¹¹ Yield

¹² 80*10*4 sp=62mm

¹³ 80*10*4

¹⁴ 80*10*4 mm

¹⁵ Rate B (120°C/h), Loading 2 (50 N)

¹⁶ Approximate maximum

¹⁷ Tungsten Electrode

Where to Buy

Supplier

VALOX™ 430 resin

SABIC Innovative Plastics

Pittsfield, MA USA

Telephone: 800-845-0600

Web: <http://www.sabic-ip.com/>

VALOX™ IQ420 resin

SABIC Innovative Plastics

Pittsfield, MA USA

Telephone: 800-845-0600

Web: <http://www.sabic-ip.com/>

Distributor

VALOX™ 430 resin

Nexeo Solutions

Telephone: 888-594-6009

Web: <http://www.nexeosolutions.com/>

Availability: North America

VALOX™ IQ420 resin

Nexeo Solutions

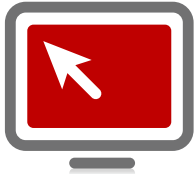
Telephone: 888-594-6009

Web: <http://www.nexeosolutions.com/>

Availability: North America



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– Birgit Elvardt Bader, Production Manager, Micotron

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– Kevin Chase, Owner & President, Chase Plastics



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