

Styrolux® 684D is a clear styrene-butadiene copolymer (SBC) used in injection molding for parts with enhanced toughness as well as in sheet and film extrusion and blow molding.

Parts made of Styrolux® 684D reveal excellent printability.

Major applications include: food and non-food packagings, transparent containers and cups for cold beverages, thermoformed lids, thin film with high gas and water vapor permeability, toys, boxes.

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	11	cm ³ /10min	ISO 1133
Temperature	200	°C	-
Load	5	kg	-

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	1500	MPa	ISO 527
Yield stress	26	MPa	ISO 527
Yield strain	2.3	%	ISO 527
Nominal strain at break	>50	%	ISO 527
Tensile Creep Modulus, 1h	1290	MPa	ISO 899-1
Tensile Creep Modulus, 1000h	790	MPa	ISO 899-1
Impact Strength (Charpy), +23°C	no break	kJ/m ²	ISO 179/1eU
Notched Impact Strength (Charpy), +23°C	4	kJ/m ²	ISO 179/1eA

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Temp. of deflection under load (1.80 MPa)	65	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	75	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	59	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	75	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	HB	class	UL 94
Thickness tested	1.6	mm	-
Burning Behav. at thickness h	HB	class	UL 94
Thickness tested	3.2	mm	-

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	2.5	-	IEC 62631-2-1
Relative permittivity, 1MHz	2.5	-	IEC 62631-2-1
Dissipation Factor, 100Hz	3	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	8	E-4	IEC 62631-2-1
Volume Resistivity	>1E13	Ohm*m	IEC 62631-3-1
Surface Resistivity	1E15	Ohm	IEC 62631-3-2
Comparative tracking index	600	-	IEC 60112

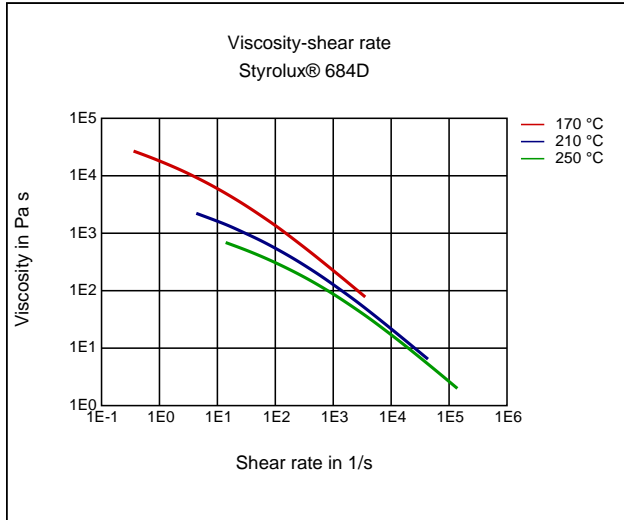
Other Properties	Value	Unit	Test Standard
ISO Data			
Water Absorption	0.07	%	Sim. to ISO 62
Humidity absorption	0.07	%	Sim. to ISO 62
Density	1010	kg/m ³	ISO 1183

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	230	°C	ISO 294
Injection Molding, mold temperature	50	°C	ISO 294
Injection Molding, injection velocity	200	mm/s	ISO 294

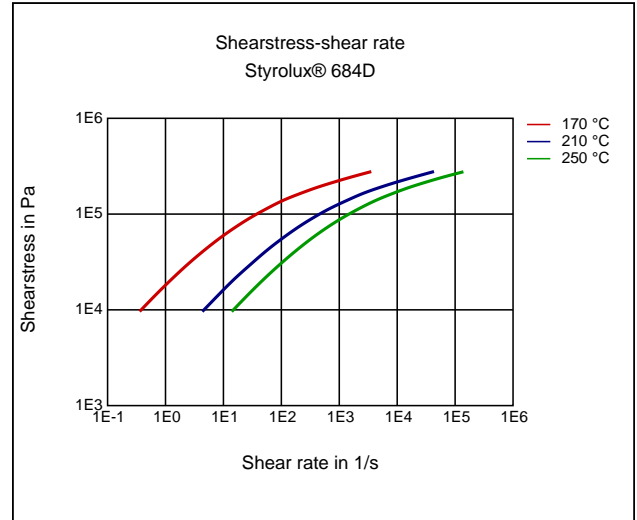
Processing Recommendation Injection Molding	Value	Unit	Test Standard
Melt temperature	180 - 250	°C	-
Mold temperature	30 - 50	°C	-

Diagrams

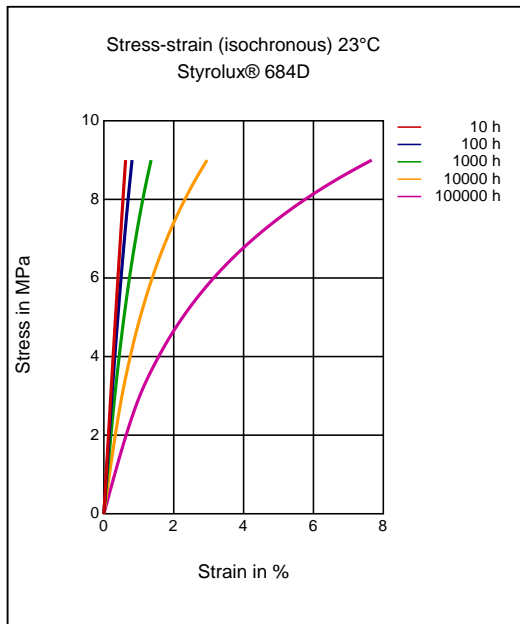
Viscosity-shear rate



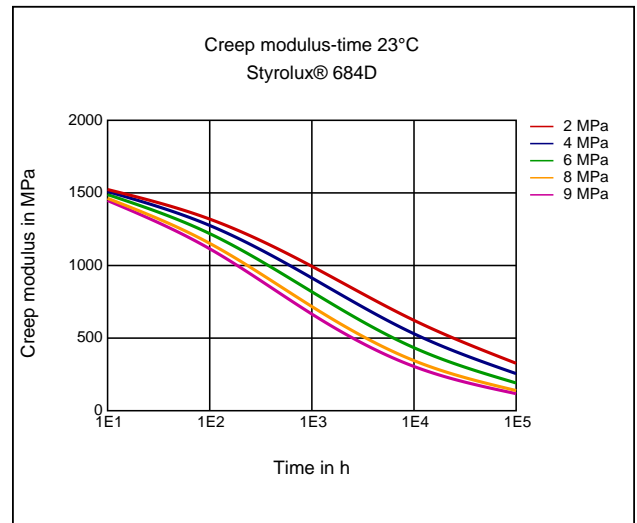
Shearstress-shear rate



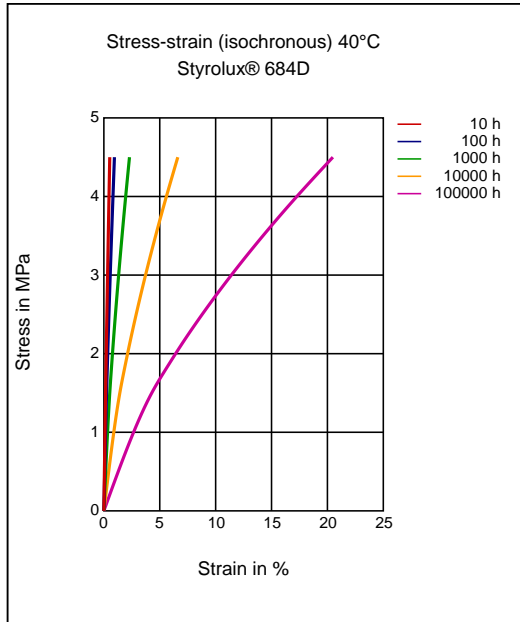
Stress-strain (isochronous) 23 °C



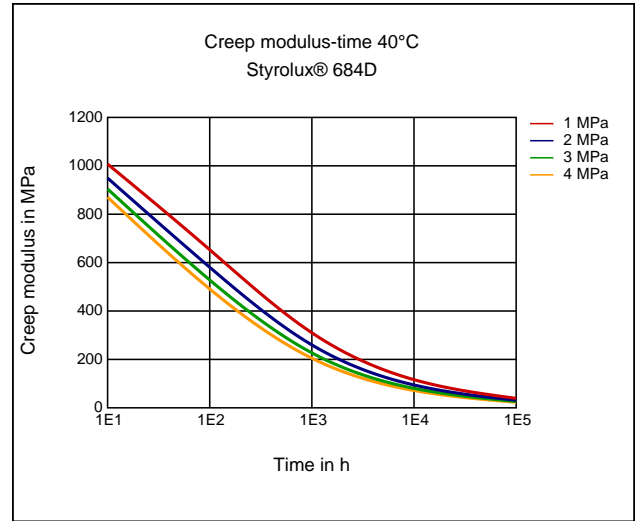
Creep modulus-time 23 °C



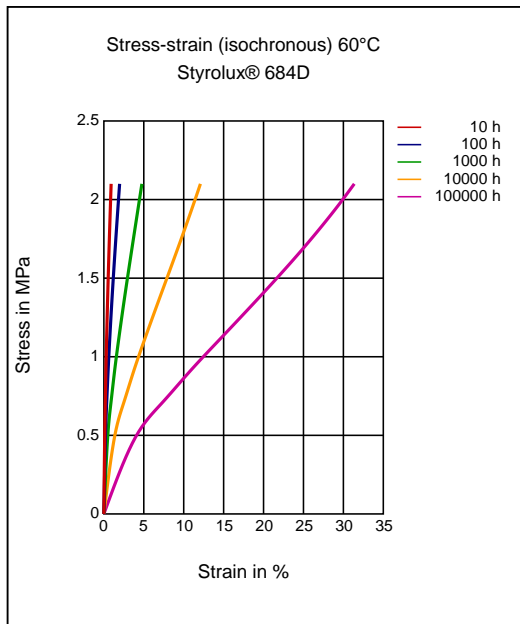
Stress-strain (isochronous) 40 °C



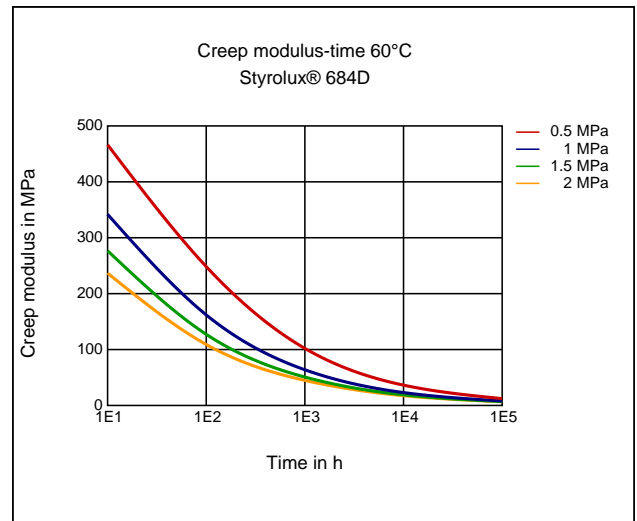
Creep modulus-time 40 °C



Stress-strain (isochronous) 60 °C



Creep modulus-time 60 °C



Characteristics

Processing

Injection Molding, Film Extrusion, Sheet Extrusion, Other Extrusion, Blow Molding

Special Characteristics

Sterilizable, Ethylene Oxide (EtO) Sterilization, Gamma irradiation sterilization

Certifications

Medical, Biocompatibility ISO 10993, US Pharmacopeia Class VI Approved, Drug Master File, Long term supply assurance, Food approval, Food approval 10/2011, Food Contact (FDA)

Applications

Medical

Chemical Resistance

Radiation Resistance

Injection Molding

PROCESSING

injection molding, Melt temperature, range: 180 - 250 °C

injection molding, Mold temperature, range: 30 - 50 °C

Film Extrusion

PROCESSING

Extrusion, Blown film, Melt temperature: 180 °C

Extrusion, Flat film, Melt temperature: 190 - 230 °C

Other Extrusion

PROCESSING

Extrusion, Pipes, Melt temperature: 230 °C

Sheet Extrusion

PROCESSING

Extrusion, Plates, Melt temperature: 190 °C

Disclaimer

Liability Exclusion

These guide values are measured and provided by the product manufacturer and have been determined on standardised test specimens and can be affected by pigmentation, mould design and processing conditions. M-Base has taken the guide values from the producer's original Technical Data Sheet. **ALBIS AND M-BASE ARE THEREFORE NOT RESPONSIBLE FOR THE ACCURACY OF THE GUIDE VALUES AND CANNOT GIVE ANY WARRANTY WITH REGARD TO THEIR CORRECTNESS.**

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