

# STYRON™ 685D

General Purpose Polystyrene Resin

Trinseo

Message:

STYRON™685D is a general-purpose polystyrene material. This product is available in North America or Latin America and is processed by extrusion or injection molding.

STYRON™The main features of 685D are:

- flame retardant/rated flame
- High stiffness
- high strength
- accessible food
- Heat resistance

Typical application areas include:

- medical/health care
- sheet
- Foam
- food contact applications

General Information			
UL YellowCard		E326906-100171519	
Features		Rigidity, high	
		High tensile strength	
		Good melt strength	
		Heat resistance, high	
		Compliance of Food Exposure	
Uses		Foam	
		Sheet	
		Medical/nursing supplies	
Agency Ratings		FDA 21 CFR 177.1640	
		USP Class VI	
UL File Number		E326906	
Appearance		Transparent-Light Blue	
Forms		Particle	
Processing Method		Extrusion	
		Injection molding	
Physical	Nominal Value	Unit	Test Method
Specific Gravity	1.04	g/cm³	ASTM D792
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	1.5	g/10 min	ASTM D1238
Molding Shrinkage - Flow	0.40 - 0.80	%	ASTM D955
Hardness	Nominal Value	Unit	Test Method

Rockwell Hardness (L-Scale)	107		ASTM D785
<b>Mechanical</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Tensile Modulus (Injection Molded)	3170	MPa	ASTM D638
Tensile Strength			ASTM D638
Fracture, injection molding	52.0	MPa	ASTM D638
Injection Molding	52.0	MPa	ASTM D638
Tensile Elongation (Break, Injection Molded)	3.0	%	ASTM D638
Flexural Modulus (Injection Molded)	3240	MPa	ASTM D790
Flexural Strength (Injection Molded)	90.0	MPa	ASTM D790
<b>Impact</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Notched Izod Impact (23°C, Injection Molded)	21	J/m	ASTM D256
<b>Thermal</b>	<b>Nominal Value</b>	<b>Unit</b>	<b>Test Method</b>
Deflection Temperature Under Load			ASTM D648
0.45 MPa, not annealed	98.0	°C	ASTM D648
1.8 MPa, not annealed	89.0	°C	ASTM D648
Vicat Softening Temperature	108	°C	ASTM D1525
CLTE - Flow	9.0E-5	cm/cm/°C	ASTM D696
<b>Flammability</b>	<b>Nominal Value</b>		<b>Test Method</b>
Flame Rating	HB		UL 94
<b>Injection</b>	<b>Nominal Value</b>	<b>Unit</b>	
Rear Temperature	218 - 249	°C	
Middle Temperature	218 - 249	°C	
Front Temperature	199 - 213	°C	
Nozzle Temperature	213 - 243	°C	
Mold Temperature	15.6 - 65.6	°C	
Injection Rate	Fast		
Back Pressure	0.200 - 1.20	MPa	
Cushion	6.35	mm	
<b>Extrusion</b>	<b>Nominal Value</b>	<b>Unit</b>	
Cylinder Zone 1 Temp.	177 - 193	°C	
Cylinder Zone 2 Temp.	182 - 204	°C	
Cylinder Zone 3 Temp.	188 - 210	°C	
Cylinder Zone 4 Temp.	199 - 216	°C	
Cylinder Zone 5 Temp.	204 - 221	°C	
Adapter Temperature	193 - 232	°C	
Melt Temperature	193 - 232	°C	
Die Temperature	199 - 232	°C	
<b>Extrusion instructions</b>			

Zone 6 Temperature: 204 to 221°C Melt Pump, Pipes, Screen Changer Temperature: 193 to 232°C Polish Rolls Temperature: 66 to 104°C Head Pressure: 10 to 21 MPa

The information and data on this page are provided by manufacturers and document providers. SHANGHAI SUSHENG assumes no legal liability. It is strongly recommended to verify all technical data with material suppliers before final material selection.All rights belong to the original authors. If any infringement occurs, please contact us immediately.

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519  
Phone: +86 13424755533  
Email: sales@su-jiao.com  
No. 215, Lianhe North Road, Fengxian District, Shanghai, China

