K-Resin® KR01

INEOS Styrolution - Styrene Butadiene Block Copolymer

Wednesday, January 29, 2020

General Information

Product Description

K-Resin® KR01 process very well in injection molding, providing good cycle times and design flexibility. Applications range from containers and packaging with living hinges to medical applications, toys, displays, overcaps and hangers. INEOS Styrolution has several grades of K-Resin® SBC tailored for your injection molded needs.

FEATURES

- Excellent Clarity
- Good Stiffness
- Good Toughness
- High Surface Gloss
- Warpage Resistance

APPLICATIONS

- Molded Boxes with Integral Hinges
- Medical Devices
- Displays
- Toys

General			
Material Status	• Commercial: Active		
Regional Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Block Copolymer • Good Processability • Good Stiffness	• Good Toughness • High Clarity • High Gloss	• Warp Resistant
Uses	• Containers • Displays	• Medical Devices • Medical/Healthcare Applications	• Packaging • Toys
Appearance	• Clear/Transparent		
Processing Method	• Injection Molding		

ASTM & ISO Properties [1]

Physical	Typical Value (English)		Typical Value (SI)		Test Method
Density / Specific Gravity					
--	1.01		1.01		ASTM D792
--	1.02	g/cm³	1.02	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR) (200°C/5.0 kg)	8.0	g/10 min	8.0	g/10 min	ASTM D1238
Melt Volume-Flow Rate (MVR) (200°C/5.0 kg)	8.00	cm³/10min	8.00	cm³/10min	ISO 1133
Mechanical	**Typical Value (English)**		**Typical Value (SI)**		**Test Method**
Tensile Modulus	232000	psi	1600	MPa	ISO 527-2
Tensile Strength					
Yield, 73°F (23°C)	4850	psi	33.4	MPa	ASTM D638
Yield, 73°F (23°C)	4790	psi	33.0	MPa	ISO 527-2

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Mechanical	Typical Value (English)		Typical Value (SI)		Test Method
Tensile Strain					
Yield, 73°F (23°C)	2.8	%	2.8	%	ISO 527-2
Break, 73°F (23°C)	30	%	30	%	ASTM D638
Break, 73°F (23°C)	15	%	15	%	ISO 527-2
Flexural Modulus					
73°F (23°C)	261000	psi	1800	MPa	ASTM D790
73°F (23°C)	218000	psi	1500	MPa	ISO 178
Flexural Strength					
73°F (23°C)	7830	psi	54.0	MPa	ASTM D790
73°F (23°C)	6240	psi	43.0	MPa	ISO 178
Impact	**Typical Value**	**(English)**	**Typical Value**	**(SI)**	**Test Method**
Charpy Notched Impact Strength (73°F (23°C))	0.95	ft·lb/in²	2.0	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength					ISO 179/1eU
73°F (23°C)	13	ft·lb/in²	27	kJ/m²	
Instrumented Dart Impact (Total Energy)	19.0	in·lb	2.15	J	ASTM D3763
Hardness	**Typical Value**	**(English)**	**Typical Value**	**(SI)**	**Test Method**
Durometer Hardness					
Shore D	69		69		ASTM D2240
Shore D	70		70		ISO 868
Thermal	**Typical Value**	**(English)**	**Typical Value**	**(SI)**	**Test Method**
Heat Deflection Temperature					
66 psi (0.45 MPa), Unannealed	172	°F	78.0	°C	ISO 75-2/B
264 psi (1.8 MPa), Annealed	148	°F	64.4	°C	ASTM D648
264 psi (1.8 MPa), Annealed	149	°F	65.0	°C	ISO 75-2/A
Vicat Softening Temperature					
--	194	°F	90.0	°C	ASTM D1525 [2]
--	149	°F	65.0	°C	ISO 306/B50
--	196	°F	91.0	°C	ISO 306/A50
CLTE - Flow	3.3E-5 to 5.0E-5	in/in/°F	6.0E-5 to 9.0E-5	cm/cm/°C	ISO 11359-2
Optical	**Typical Value**	**(English)**	**Typical Value**	**(SI)**	**Test Method**
Gloss [3]	164		164		ASTM D2457
Refractive Index [4]	1.570		1.570		ISO 489
Transmittance (550 nm)	92.0	%	92.0	%	ASTM D1003
Haze	1.00	%	1.00	%	ASTM D1003

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] Rate B (120°C/h), Loading 1 (10 N)

[3] (mold temperature 100°F)

[4] Sodium D Line