INEOS ABS

LUSTRAN® Guardian ™ ABS 682

ABS

Injection Molding Grade

Lustran ABS 682 is a high performance, HCFC-141b resistant grade of ABS for injection molded refrigerator and freezer components. As with any product, use of Lustran ABS 682 resin in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

Typical Properties*	ASTM Test Method (Other)	Lustran® ABS 682
General		
Melt Flow Rate at 220°C/10-kg Load	D 1238	5.2 g/10 min
Melt Flow Rate at 230°C/3.8-kg Load	D 1238	0.7 g/10 min
Melt Flow Rate at 230°C/10-kg Load	D 1238	8 g/10 min
Specific Gravity	D 792	1.05
Mold Shrinkage	D 955	0.004 - 0.006 mm/mm
Gloss		
60° Angle	(Gardner)	96%
20° Angle	(Gardner)	87%
Mechanical		
Tensile Stress at Yield	D 638	43 MPa
Tensile Stress at Fail	D 638	32 MPa
Tensile Elongation at Fail	D 638	34%
Tensile Modulus	D 638	2.47 GPa
Flexural Stress at Yield	D 790	72 MPa
Flexural Modulus	D 790	2.53 GPa
Multiaxial Impact (3.4 m/s, 40-mm ring, M831 Striker)	D 3763	
Energy to Peak Load, 23°C		20 J
Total Energy, 23°C		33 J
Energy to Peak Load, -18°C		26 J
Total Energy, -18°C		30 J
Izod Impact	D 256	
12.7-mm x 3.2-mm, 0.25-mm notch, 23°C		48 kJ/m^2
12.7-mm x 3.2-mm, 0.25-mm notch, -18°C		13.8 kJ/m^2
Thermal		
DTUL, Annealed 2 hours at 80°C	D 648	
1.82 MPa		95.1°C
Vicat Softening Temperature	D 1525	
1 kg load, 120°C/Hour		108.9°C
Coefficient of Linear Thermal Expansion	D 696	10.2 x 10^{-5} mm/mm/°C
Flammability**		
UL 94 Flame Class:		
1.1-mm Thickness (White)	(UL94)	HB Rating
1.5-mm Thickness (All Colors)	(UL94)	HB Rating

** These items are provided as general information only. They are approximate values and are not part of the product specifications.*

*** Flammability results are based on small scale laboratory tests for comparison purposes only and do not necessarily represent the hazard presented by this or any other material under actual fire conditions.*

Typical Properties*	ISO Test Method (Other)	Lustran® ABS 682
General		
Melt Flow Rate at 220°C/10-kg Load	ISO 1133	5.2 g/10 min
Melt Flow Rate at 230°C/3.8-kg Load	ISO 1133	0.7 g/10 min
Melt Flow Rate at 230°C/10-kg Load	ISO 1133	8 g/10 min
Specific Gravity	ISO 1183	1.05
Mold Shrinkage	(ASTM D 955)	0.004 - 0.006 in/in
Gloss		
60° Angle	(Gardner)	96%
20° Angle	(Gardner)	87%
Mechanical		
Tensile Stress at Yield, 23°C (50-mm/min)	ISO 527	48 MPa
Tensile Stress at Fail, 23°C (50-mm/min)	ISO 527	34 MPa
Tensile Elongation at Fail, 23°C (50-mm/min)	ISO 527	20%
Tensile Modulus, 23°C (1-mm/min)	ISO 527	2.42 GPa
Tensile Stress at Yield, -18°C (50-mm/min)	ISO 527	64 MPa
Tensile Stress at Fail, -18°C (50-mm/min)	ISO 527	52 MPa
Tensile Elongation at Fail, -18°C (50-mm/min)	ISO 527	15%
Tensile Modulus, -18°C (1-mm/min)	ISO 527	2.81 GPa
Flexural Stress at Yield, 23°C (2-mm/min)	ISO 178	72 MPa
Flexural Modulus, 23°C (2-mm/min)	ISO 178	2.48 GPa
Izod Impact	ISO 180	
10.0-mm x 4.0-mm, 0.25-mm notch, 23°C		29 kJ/m^2
10.0-mm x 4.0-mm, 0.25-mm notch, -18°C		12 kJ/m^2
Thermal		
DTUL, Annealed 2 hours at 80°C	ISO 75	
1.82 MPa		94.5°C
Vicat Softening Temperature	ISO 306	
5 kg load, 120°C/Hour		97.0°C
5 kg load, 50°C/Hour		94.1°C
Coefficient of Linear Thermal Expansion	(ASTM D 696)	10.2 x 10^{-5} mm/mm/°C
Flammability**		
UL 94 Flame Class:		
1.1-mm Thickness (White)	(UL94)	HB Rating
1.5-mm Thickness (All Colors)	(UL94)	HB Rating

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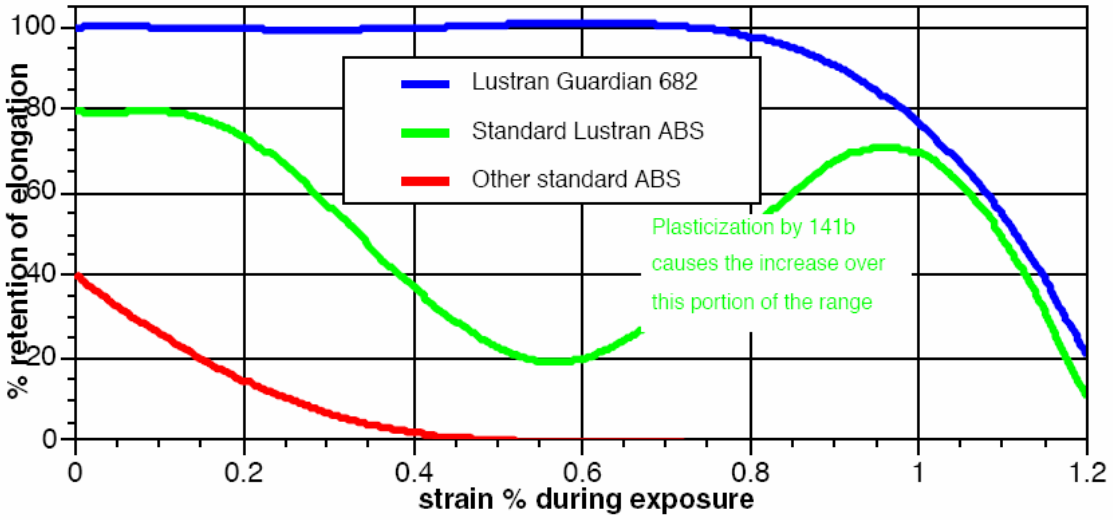
Chemical Resistance

- ***Critical Strain*** † of Guardian 682 on exposure to HCFC-141b: **>0.8%**
  Compare to *Critical Strain* of standard ABS on exposure to CFC-11: ~0.4—0.5%

  † Critical strain is the maximum level of strain that the material can withstand before it shows surface cracks and crazes, an indication of embrittlement by chemical attack.

- ***Retention of elongation*** of Guardian 682 on exposure to HCFC-141b

Lustran Guardian 682 shows superior retention of tensile elongation after exposure to HCFC-141b



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Regulatory Compliance Information

Some of the end uses of the product described in this bulletin must comply with applicable regulations, such as FDA, NSF, USDA, and CPSC. If you have any questions on the regulatory status of this product, contact your INEOS ABS representative or Regulatory Affairs Manager at INEOS ABS.

Health and Safety Information

Appropriate literature has been assembled which provides information concerning the health and safety precautions that must be observed when handling the INEOS ABS products mentioned in this publication. For materials mentioned which are not INEOS ABS products, appropriate industrial hygiene and other safety precautions recommended by their manufacturers should be followed. Before working with any of these products, you must read and become familiar with the available information on their hazards, proper use, and handling. This cannot be overemphasized. Information is available in several forms, *e.g., material safety data sheets and product labels*. Consult your INEOS ABS representative or contact the Product Safety and Regulatory Affairs Department at INEOS ABS.

Note: The information contained in this publication is current as of March 2009. Please contact INEOS ABS to determine whether this publication has been revised.

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