

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 Melt Flow Rate at 230°C/3.8-kg Load Melt Flow Rate at 230°C/10-kg Load Specific Gravity Mold Shrinkage	D 1238 D 1238 D 1238 D 792 D 955	5.2 g/10 min 0.7 g/10 min 8 g/10 min 1.05 0.004 - 0.006 mm/mm
Gloss 60° Angle 20° Angle	(Gardner) (Gardner)	96% 87%
Mechanical Tensile Stress at Yield Tensile Stress at Fail Tensile Elongation at Fail Tensile Modulus Flexural Stress at Yield Flexural Modulus Multiaxial Impact (3.4 m/s, 40-mm ring, M831 Striker) Energy to Peak Load, 23°C Total Energy, 23°C Energy to Peak Load, -18°C Total Energy, -18°C Izod Impact 12.7-mm x 3.2-mm, 0.25-mm notch, 23°C 12.7-mm x 3.2-mm, 0.25-mm notch, -18°C	D 638 D 638 D 638 D 638 D 790 D 790 D 3763 D 256	43 MPa 32 MPa 34% 2.47 GPa 72 MPa 2.53 GPa 20 J 33 J 26 J 30 J 48 kJ/m ² 13.8 kJ/m ²
Thermal DTUL, Annealed 2 hours at 80°C 1.82 MPa Vicat Softening Temperature 1 kg load, 120°C/Hour Coefficient of Linear Thermal Expansion	D 648 D 1525 D 696	95.1°C 108.9°C 10.2 x 10 ⁻⁵ mm/mm/°C
Flammability** UL 94 Flame Class: 1.1-mm Thickness (White) 1.5-mm Thickness (All Colors)	(UL94) (UL94)	HB Rating 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 Melt Flow Rate at 230°C/3.8-kg Load Melt Flow Rate at 230°C/10-kg Load Specific Gravity Mold Shrinkage	ISO 1133 ISO 1133 ISO 1133 ISO 1183 (ASTM D 955)	5.2 g/10 min 0.7 g/10 min 8 g/10 min 1.05 0.004 - 0.006 in/in
Gloss 60° Angle 20° Angle	(Gardner) (Gardner)	96% 87%
Mechanical Tensile Stress at Yield, 23°C (50-mm/min) Tensile Stress at Fail, 23°C (50-mm/min) Tensile Elongation at Fail, 23°C (50-mm/min) Tensile Modulus, 23°C (1-mm/min) Tensile Stress at Yield, -18°C (50-mm/min) Tensile Stress at Fail, -18°C (50-mm/min) Tensile Elongation at Fail, -18°C (50-mm/min) Tensile Modulus, -18°C (1-mm/min) Flexural Stress at Yield, 23°C (2-mm/min) Flexural Modulus, 23°C (2-mm/min) Izod Impact 10.0-mm x 4.0-mm, 0.25-mm notch, 23°C 10.0-mm x 4.0-mm, 0.25-mm notch, -18°C	ISO 527 ISO 527 ISO 527 ISO 527 ISO 527 ISO 527 ISO 527 ISO 527 ISO 527 ISO 178 ISO 178 ISO 180	48 MPa 34 MPa 20% 2.42 GPa 64 MPa 52 MPa 15% 2.81 GPa 72 MPa 2.48 GPa 29 kJ/m ² 12 kJ/m ²
Thermal DTUL, Annealed 2 hours at 80°C 1.82 MPa Vicat Softening Temperature 5 kg load, 120°C/Hour 5 kg load, 50°C/Hour Coefficient of Linear Thermal Expansion	ISO 75 ISO 306 (ASTM D 696)	94.5°C 97.0°C 94.1°C 10.2 x 10 ⁻⁵ mm/mm/°C
Flammability** UL 94 Flame Class: 1.1-mm Thickness (White) 1.5-mm Thickness (All Colors)	(UL94) (UL94)	HB Rating HB Rating

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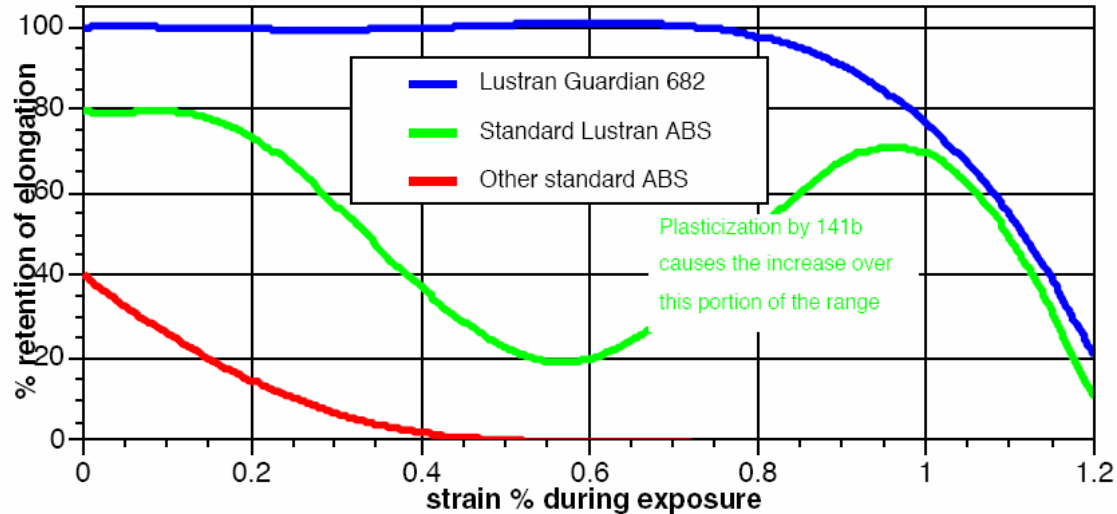
Chemical Resistance

- **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.