

LUSTRAN[®] SAN DN59

SAN

Soft-Flow Grade

Description

Lustran SAN DN59 resin is a soft-flow grade of transparent SAN (styrene acrylonitrile) thermoplastic. It has been designed for use in compounding and thin-wall injection molded applications. Lustran SAN DN59 has a large molding window and is easy to process. It is available only in natural (000000) color.

As with any product, use of Lustran SAN DN59 resin in a given application must be tested (including field testing, etc.) in advance by the user to determine suitability.

Drying

Drying prior to processing in a desiccant dehumidifying hopper dryer is recommended. An inlet air dew point of -20°F (-29°C) or below is recommended to achieve a moisture content of <0.2%. Typical drying conditions are 2 hours at 180°-190°F (82°-88°C). Drying for 4 hours at 160°-170°F (71°-77°C) is also adequate.

Processing

A reciprocating screw injection molding machine is preferred. A general-purpose screw with a 2.5:1 compression ratio is suggested. A minimum L/D ratio of 20:1 will ensure melt homogeneity.

Use minimum melt temperature with minimum barrel residence time, consistent with good part quality. To avoid excessive residence time, volume and weight of the shot should be balanced against barrel capacity and injection stroke. A shot weight-to-machine ratio capacity of 0.5-0.7 is recommended. A mold temperature of 120-180°F (50-80°C) is recommended for development of maximum gloss and strength.

Undercuts must be avoided when processing SAN. To avoid mold release problems, a minimum draft of 1° should be specified.

Typical processing parameters are noted below. Actual processing conditions will depend on machine size, mold design, material residence time, and shot size.

Typical Injection Molding Conditions*	
Barrel Temperatures:	
Rear.....	340° – 365°F (170° – 185°C)
Middle.....	365° – 390°F (185° – 200° C)
Rear.....	395° – 420°F (200° – 215°C)
Rear.....	395° – 420°F (200° – 215°C)
Melt Temperature.....	425° – 500°F (220° – 260°C)
Mold Temperature.....	100° – 180°F (40° – 80 °C)
Injection Pressure.....	10,000 – 20,000 psi
Hold Pressure.....	40 – 80% of Injection Pressure
Back Pressure.....	0 – 25 psi
Screw Speed.....	Moderate
Injection Speed.....	Moderate to High
Cushion.....	1/8 in max
Clamp.....	2 – 4 ton/in ²

Additional information on processing may be obtained by contacting an INEOS ABS technical service representative.

* *Extended barrel soak time at start-up or short-term shutdown (up to 6 hours) will change color of material in barrel.*

Regrind Usage

For Lustran SAN resin, up to 20% regrind may be used with virgin material, depending upon the end-use requirements of the molded part and provided that the material is kept free of contamination and is properly dried (see section on Drying). Any regrind used must be generated from properly molded parts, sprues, and/or runners. All regrind used must be clean, uncontaminated, and thoroughly blended with virgin resin prior to drying and processing. Under no circumstances should degraded, discolored, or contaminated material be used for regrind. Materials of this type should be discarded.

Improperly mixed and/or dried regrind may diminish the desired properties of Lustran SAN resin. It is critical that you test finished parts produced with any amount of regrind to ensure that your end-use performance requirements are fully met. Regulatory or testing organizations (e.g., UL) may have specific requirements limiting the allowable amount of regrind. Because third party regrind generally does not have a traceable heat history, nor offer any assurance that proper temperatures, conditions, and/or materials were used in processing, extreme caution must be exercised in buying and using regrind from third parties.

The use of regrind material should be avoided entirely in those applications where resin properties equivalent to virgin material are required, including but not limited to color quality, impact strength, resin purity, and/or load-bearing performance.

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.

Typical Properties* for Natural Resin	ASTM Test Method (Other)	Lustran® SAN DN59 Resin
General Specific Gravity Density Specific Volume Mold Shrinkage Melt Flow Rate at 230°C/3.8-kg Load Acrylonitrile Content	D 792 D 792 D 792 D 955 D 1238	1.07 1.07 g/cm ³ 0.93 cm ³ /g 0.003 – 0.004 mm/mm 25 g/10 min 29.5%
Mechanical Tensile Stress at Break Tensile Modulus Flexural Stress at Yield Flexural Modulus Izod Impact	(ISO 527) (ISO 527) (ISO 178) (ISO 178) (ISO 180)	58 MPa 4.71 GPa 91 MPa 3.76 GPa 1.47 kJ/m ²
Thermal Vicat Softening Temperature (5 kg Load) Method A, 120°C/Hour Method B, 120°C/Hour Method B, 50°C/Hour	(ISO 306)	105.9°C 101.8°C 99.5°C

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

Note: The information contained in this publication is current as of March 2008. Please contact INEOS ABS to determine whether this publication has been revised.

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