INEOS ABS

LUSTRAN® ABS 241

ABS

Blending Grade for DWV Pipe and Fittings

Description

Lustran ABS 241 resin is a natural, stiffer-flow, virgin blending grade of ABS (acrylonitrile butadiene styrene). It is designed for use with other high-impact ABS resins for drain, waste, and vent (DWV) pipe and fittings. Lustran ABS 241 resin in natural color (000000) meets or exceeds ASTM D 3965 1-1-2-2-2 cell class requirements. It is also listed under NSF Standard 14. As with any product, use of Lustran ABS 241 resin in a given application must be tested (including but not limited to field testing) in advance by the user to determine suitability.

Drying

Drying prior to processing is recommended in a desiccant dehumidifying hopper dryer. An inlet air dew point of -20°F (-29°C) or below is recommended to achieve a moisture content of 0.05% maximum. Typical drying conditions are 2 hours at 180°-200°F (82°-93°C).

Processing for Injection Molding

The following processing parameters are recommended when using blends to injection-mold DWV fittings. Actual processing conditions will depend on machine size, mold design, material residence time, and shot size.

Typical Injection Molding Conditions	
Melt Temperature	450° – 470°F (232° – 243°C)
Mold Temperature	110° – 150°F (43° – 66°C)
Injection Pressure	Moderately High to High
Injection Speed	Moderate to Fast
Cushion	Minimum

Please consult an INEOS ABS technical service representative for additional information on blending for injection molding.

Processing for Extrusion

The following processing parameters are recommended when using blends to extrude DWV pipe.

Screw Design. Good extrusion characteristics are obtained on a variety of screw types, such as conventional single- and two-stage metering and single- and two-stage high-shear screws, which utilize mixing rings or multiple flight configurations. Typically, best performance has been observed with those screws having compression ratios between 2.4 and 2.8:1 and length-to-diameter ratios of 24 to 36:1.

Dies. Interiors should be streamlined with smooth, chrome-plated surfaces to minimize stock hang-up and degradation. Thin, tear-drop spider vanes are highly recommended to maximize weld-line strength. Welds are further strengthened by compressing the melt in the final die lip approach. For Schedule 40 pipe that is 4 inches and under in diameter, a land length-to-pin clearance ratio of 25:1 is preferred. Dies for larger-diameter and/or heavier-wall pipe may require higher ratios or pin chokes.

Melt Temperature. Optimum pipe properties are obtained when melt temperatures are between 450° and 470°F (232° and 243°C). Temperatures above 500°F (260°C) are not recommended since these can lead to degradation on the inner pipe walls.

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

Regrind Information

Generally ABS regrind can be used up to 40% with virgin ABS as long as the regrind is clean and uncontaminated with other materials and properly dried. However, DWV pipe and fittings are regulated by NSF under Standard 14.

NSF Standard 14 restricts the use of regrind. Each processor must submit samples and obtain specific approval from NSF to utilize any regrind. NSF, after review and testing, has allowed the use of in-plant line scrap, which would be the processor's regrind, up to about 10%. For more information, consult NSF Standard 14 or call NSF.

For DWV applications that are not covered by NSF Standard 14, consult the appropriate building code or applicable regulatory agency for guidelines or call your INEOS ABS representative.

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 Physical Properties* for Natural Resin	ASTM Test Method (Other)	Lustran® ABS 241 Resin** U.S. Conventional	SI Metric
General			
Specific Gravity	D 792	1.05	
Density	D 792	0.038 lb/in³	1.05 g/cm³
Specific Volume	D 792	26.4 in³/lb	0.95 cm³/g
Melt Flow Rate at 290°C/10-kg Load	D 1238	15.0 g/10 min	
Mechanical			
Tensile Stress at Yield	D 638	6,000 lb/in²	39 MPa
Tensile Modulus	D 638	360,000 lb/in²	2.5 GPa
Impact Strength, Notched Izod:	D 256		
0.125-in (3.2-mm) Thickness			
73°F (23°C)		2.6 ft·lb/in	139 J/m
-22°F (-30°C)		1.5 ft·lb/in	80 J/m
Thermal			
Deflection Temperature, Annealed:	D 648		
0.250-in (6.4-mm) Thickness			
264-psi (1.82-MPa) Load		216°F	102°C

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

*** Property values obtained on injection molded specimens unless otherwise noted.*

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

The manner in which you use and the purpose to which you put and utilize our products, technical assistance and information (whether verbal, written or by way of production evaluations), including any suggested formulations and recommendations are beyond our control. Therefore, it is imperative that you test our products, technical assistance and information to determine to your own satisfaction whether they are suitable for your intended uses and applications. This application-specific analysis must at least include testing to determine suitability from a technical as well as health, safety, and environmental standpoint. Such testing has not necessarily been done by us. Unless we otherwise agree in writing, all products are sold strictly pursuant to the terms of our standard conditions of sale. All information and technical assistance is given without warranty or guarantee and is subject to change without notice. It is expressly understood and agreed that you assume and hereby expressly release us from all liability, in tort, contract or otherwise, incurred in connection with the use of our products, technical assistance, and information. Any statement or recommendation not contained herein is unauthorized and shall not bind us. Nothing herein shall be construed as a recommendation to use any product in conflict with patents covering any material or its use. No license is implied or in fact granted under the claims of any patent.

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