

Petrothene

LR734045

High Density Polyethylene

Blow Molding Grade

Melt Index 0.38 Density 0.953

Applications

Petrothene LR734045 is a high density polyethylene resin that exhibits good stiffness and environmental stress crack resistance. This product contains stearate as a core rod release for the injection-blow molding process. Typical applications include bottles for household chemicals.

Regulatory Status

LR734045 meets the requirements of the Food and Drug Administration regulation 21 CFR 177.1520. This regulation allows the use of this olefin polymer in "...articles or components of articles intended for use in contact with food..." Specific limitations or conditions of use may apply. Contact your Equistar sales representative for more information about the use of specific products for specific applications.

Processing Techniques

Specific recommendations for processing LR734045 can only be made when the processing conditions, equipment and end use are known. For further suggestions, please contact your Equistar sales representative.

Typical Properties

Property	Nominal Value	Units	ASTM Test Method
Melt Index	0.38	g/10 min	D 1238
Density	0.953	g/cc	D 1505
Tensile Strength @ Yield	4,000	psi	D 638
Elongation @ Break	>500	%	D 638
Flexural Modulus	176,000	psi	D 790
Tensile Impact	131	ft-lb/in.	D 1822
Low Temperature Brittleness, F ₅₀	<-76	°C	D 746
Heat Deflection Temperature @ 66 psi	75	°C	D 648
Vicat Softening Point	127	°C	D 1525
Hardness, Shore D	67		D 2240
Environmental Stress Crack Resistance, F ₅₀	25	hrs	D 1693 ¹
	>500	hrs	D 2561

¹ 100% Igepal® CO-630, 50°C

® Igepal is a registered trademark of Rhône-Poulenc Co., Inc.

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Petrothene®

LR 7340

High Density Polyethylene
Blow Molding Grade

Melt Index 0.38 Density 0.953

Applications

The PETROTHENE LR 7340 series of polyethylene resins exhibits good stiffness and environmental stress crack resistance. Typical applications include bottles for household chemicals.

Certification

The base resin LR 7340 meets the requirements of the Food and Drug Administration regulation 21 CFR 177.1520. This regulation allows the use of this olefin polymer in "...articles or components of articles intended for use in contact with food..." Specific limitations or conditions of use may apply. Contact your Equistar sales representative for more information about the use of specific products for specific applications.

Processing Techniques

Specific recommendations for processing LR 7340 can only be made when the processing conditions, equipment and end use are known. For further suggestions, please contact your Equistar sales representative.

Physical Properties

Property	Nominal Value	Units	ASTM Test Method
Melt Index	0.38	g/10 min	D 1238
Density	0.953	g/cc	D 1505
Tensile Strength @ Yield	4,000	psi	D 638
Elongation @ Break	>500	%	D 638
Flexural Modulus	176,000	psi	D 790
Tensile Impact	131	ft-lb/in.	D 1822
Low Temperature Brittleness, F ₅₀	<-76	°C	D 746
Heat Deflection Temperature @ 66 psi	75	°C	D 648
Vicat Softening Point	127	°C	D 1525
Hardness, Shore D	67		D 2240
Environmental Stress Crack Resistance, F ₅₀	25	hrs	D 1693
	>500	hrs	D 2561

Product	LR 7340-01	LR 7340-11	LR 7340-45
Antistat	None	High	None
Stearate	None	None	High

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6739-10/0201



EQUISTAR

B53-35H-100 Polyethylene Copolymer

B53-35H-100 is a high density polyethylene copolymer developed for injection blow molding. Zinc Stearate is incorporated in the formulation as a release agent. It is recommended for use in applications which require a combination of high top load strength and good environmental stress crack resistance (ESCR). This material meets the Food and Drug Administration requirements of 21CFR 177.1520.

Typical Properties¹

	Values		ASTM Method
	English Units	SI Units	
Resin			
Density	—	0.955 g/cc	D4883
Melt Index 190°C/2.16 kg	—	0.33 g/10 min	D1238
Compression Molded Samples			
Tensile Strength (2 in/min)			D638
@ Yield	4,000 psi	27 MPa	
@ Break	2,500 psi	17 MPa	
Elongation (2 in/min)			D638
@ Yield	9%	9%	
@ Break	>600%	>600%	
Flexural Modulus			D790A
Tangent Method	210,000 psi	1,450 MPa	
2% Secant Method	150,000 psi	1,035 MPa	
Notched Izod Impact Strength	3.2 ft-lbf/in	16 kJ/m ²	D256
Hardness (Shore D)	64	64	D2240
Vicat Softening Point	261 F	127 C	D1525
Brittleness Temperature	<-103 F	<-75 C	D746
Heat Deflection Temperature			D648
@ 66 psi (455 kPa)	167 F	75 C	
@ 264 psi (1,820 kPa)	118 F	48 C	
Environmental Stress Crack Resistance			D1693
Condition B, 100% Igepal F50 (hrs.)	30 hrs	30 hrs	

¹ Properties will vary and are not to be used for specification purposes.

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Olefins & Polymers USA



B53-35H-100 Polyethylene Copolymer

Regulatory Information

The product and uses described herein may require global product registrations and notifications for chemical inventory listings, or for use in food contact or medical devices. For further information, call + 1-800-527-5419.

Health and Safety Information

The product described herein may require precautions in handling and use because of toxicity, flammability, or other consideration. The Material Safety Data Sheet (MSDS) contains the available product health and safety information for this material and can be found at www.ineos-op.com. Before using any material, a customer is advised to consult the MSDS for the product under consideration for use.

The Material Safety Data Sheet for this product contains shipping descriptions and should be consulted, before transportation, as a reference in determining the proper shipping description. If the material shipped by INEOS is altered or modified, different shipping descriptions may apply and the MSDS of the original material should not be used.

For additional information, samples, pricing and availability, please contact:

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The Woodlands, TX 77387-4910
800.231.1212



PREMIUM EXTRUSION AND RIGID PACKAGING RESINS

Marlex[®] HHM 5502BN

HIGH DENSITY POLYETHYLENE

This high molecular weight, hexene copolymer is tailored for lightweight blow molded containers that:

- Require excellent stiffness
- Require exceptional processability
- Are durable and recyclable for sustainability

Typical blow molded applications for HHM 5502BN include:

- Ice chests and coolers
- Household and industrial chemical containers
- Food packaging
- Pharmaceuticals

This resin meets these specifications:

- ASTM D4976 - PE 235
- FDA 21 CFR 177.1520(c) 3.2a, use conditions B through H per 21 CFR 176.170(c)
- Listed in the Drug Master File

NOMINAL PHYSICAL PROPERTIES ⁽¹⁾	English	SI	Method
Density	---	0.955 g/cm ³	ASTM D1505
Melt Index, 190/2.16	---	0.35 g/10 min	ASTM D1238
Tensile Strength at Yield, 2 in/min, Type IV bar	4,000 psi	27 MPa	ASTM D638
Elongation at Break, 2 in/min, Type IV bar	600%	600%	ASTM D638
Flexural Modulus, Tangent - 16:1 span:depth, 0.5 in/min	200,000 psi	1,370 MPa	ASTM D790
ESCR, Condition B (100% Igepal), F ₅₀	35 h	35 h	ASTM D1693
Brittleness Temperature, Type A, Type I specimen	<-103°F	<-75°C	ASTM D746

1. The nominal properties reported herein are typical of the product, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded. The physical properties were determined on compression molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A1.

MSDS #240370

Revision Date May, 2007

Another quality product from



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PREMIUM EXTRUSION AND RIGID PACKAGING RESINS

Marlex® HHM 5502BZ

HIGH DENSITY POLYETHYLENE

This high molecular weight, hexene copolymer with zinc stearate is tailored for lightweight blow molded containers that require:

- Consistent mold-release properties
- Excellent stiffness
- Exceptional processability

Typical applications for HHM 5502BZ include:

- Pharmaceuticals
- Injection blow molding

This resin meets these specifications:

- ASTM D4976 - PE 235
- FDA 21 CFR 177.1520(c) 3.2a, use conditions B through H per 21 CFR 176.170(c)
- Listed in the Drug Master File

NOMINAL PHYSICAL PROPERTIES ⁽¹⁾	English	SI	Method
Density	---	0.955 g/cm ³	ASTM D1505
Melt Index, 190/2.16	---	0.35 g/10 min	ASTM D1238
Tensile Strength at Yield, 2 in/min, Type IV bar	4,000 psi	27 MPa	ASTM D638
Elongation at Break, 2 in/min, Type IV bar	600%	600%	ASTM D638
Flexural Modulus, Tangent - 16:1 span:depth, 0.5 in/min	210,000 psi	1,440 MPa	ASTM D790
ESCR, Condition B (100% Igepal), F ₅₀	35 h	35 h	ASTM D1693
Brittleness Temperature, Type A, Type I specimen	<-103°F	<-75°C	ASTM D746

1. The nominal properties reported herein are typical of the product, but do not reflect normal testing variance and therefore should not be used for specification purposes. Values are rounded. The physical properties were determined on compression molded specimens that were prepared in accordance with Procedure C of ASTM D4703, Annex A1.

MSDS #240370

Revision Date April, 2004

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HPB-0354 High Density Polyethylene

MELT - 0.35

DENSITY - 0.954

HPB-0354 is a certified prime grade Phillips Process BLOW MOLDING copolymer designed to meet end-use requirements of containers for packaging of Household Industrial Chemicals (HIC). **HPB-0354** features medium swell, easy and consistent processability in conventional continuous or intermittent extrusion equipment, and excellent balance of bottle ESCR, impact strength and stiffness. **HPB-0354** recommended processing temperature is 160 to 180°C, with mold at 10 to 30°C. **HPB-0354** complies with FDA regulation 21CFR 177.1520 (c) 3.1 (a) + 3.2(a) and with most international regulations concerning the use of Polyethylene in contact with food articles. **HPB-0354** has a mold temperature of 50.0 to 86.0°F with melt temperature of 320 to 356 °F.

Features:

- Detergent resistant
- Good chemical resistance
- Good processability
- High density
- High ESCR
- High impact resistance
- High stiffness

Typical Applications:

- Medium size containers for detergents, bleach, antifreeze, and motor oil
- Ice chests

PROPERTIES	ASTM	UNIT	VALUES
PHYSICAL			
Density	D1505	g/cm ³	0.954
Melt Flow Rate (190°C, 2.16kg)	D1238	g/10 min	0.35
Melt Flow Rate (190°C, 21.6kg)	D1238	g/10 min	30
Env. Stress Cracking Resistance (122°F, F50)	D1693	hr	35.0
MECHANICAL			
Tensile Strength (Yield) Comp. Mold	D638	psi	3900
Tensile Elongation (Break) Comp. Mold	D638	%	>700
Flexural Modulus - 1% Secant Comp. Mold	D790	psi	195k
Tensile Impact Strength (Comp. Mold)	D1822	ft-lb/in ²	98.0
HDT	D648	°F	165
Brittleness Temperature	D746	°F	< -130
Vicat Softening Temperature	D1525	°F	261



POLYBATCH® COLOR White LL8425

POLYBATCH® LL8425 is an advanced performance white color concentrate containing 45% TiO₂ based in LLDPE. This product has been specifically engineered to provide improved resistance to phenolic yellowing/pinking, while optimizing whiteness and thermal stability. POLYBATCH® LL8425 AP also provides optimum dispersion and opacity with excellent letdown mixing. POLYBATCH® LL8425 AP is recommended for use in extrusion film and sheet as well as injection molding applications.

Properties	Standard	Parameters	Unit
Appearance			
Pellet Count		30	pellets/gram
Chemical			
Moisture (Water Content)		1000 max	ppm
Total Ash		70	%
General			
Melt Flow Rate	ASTM D1238	190°C/2.16kg 14	g/10 minutes
Specific Gravity		1.93	

Reported values pertain only to natural resins: pigmenting may vary properties. Pellet cut, size, color, and other properties may vary depending on the manufacturing location.

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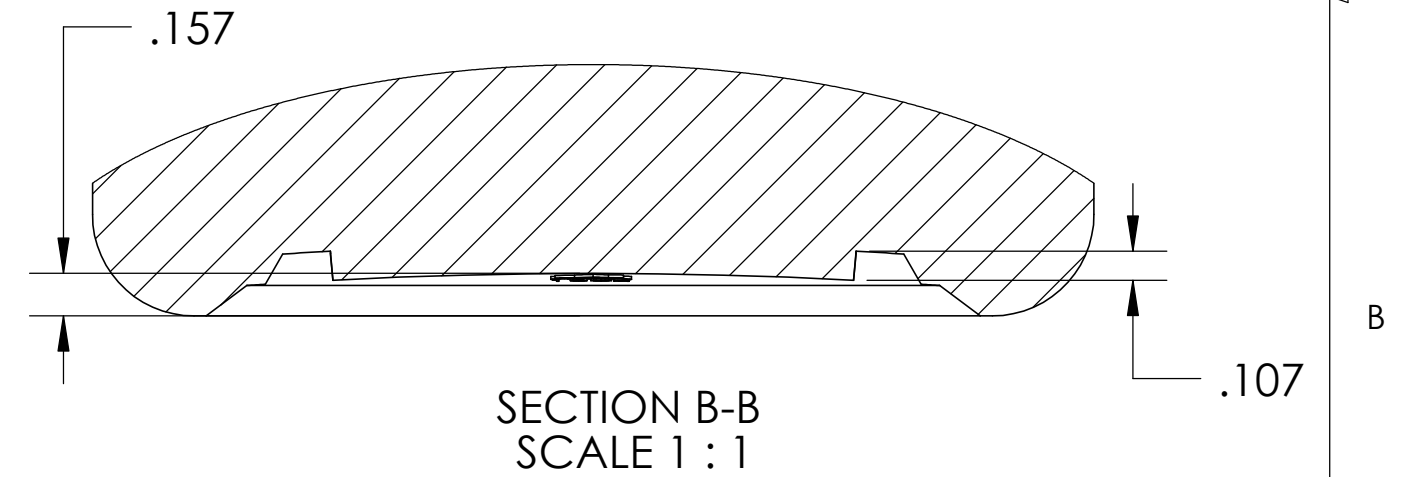
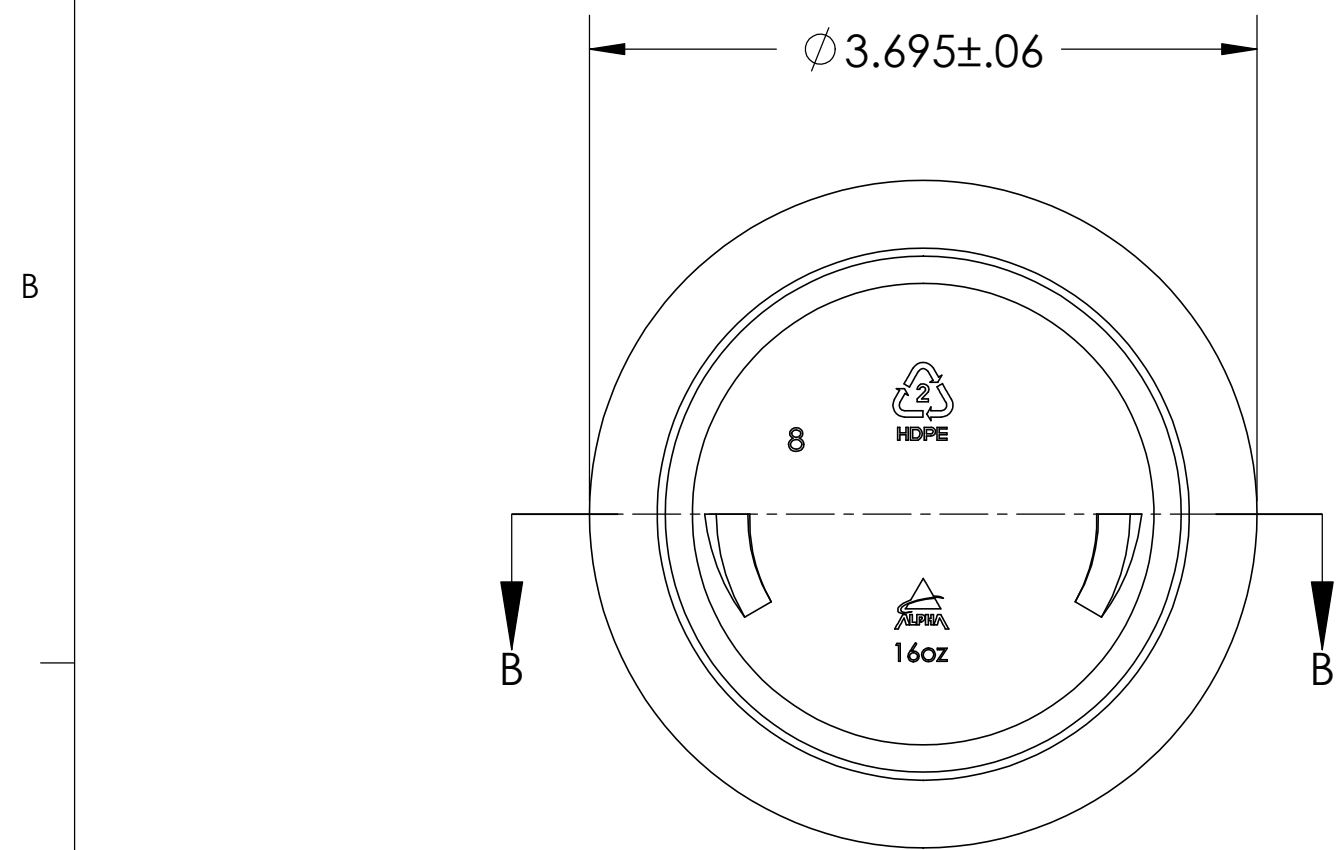
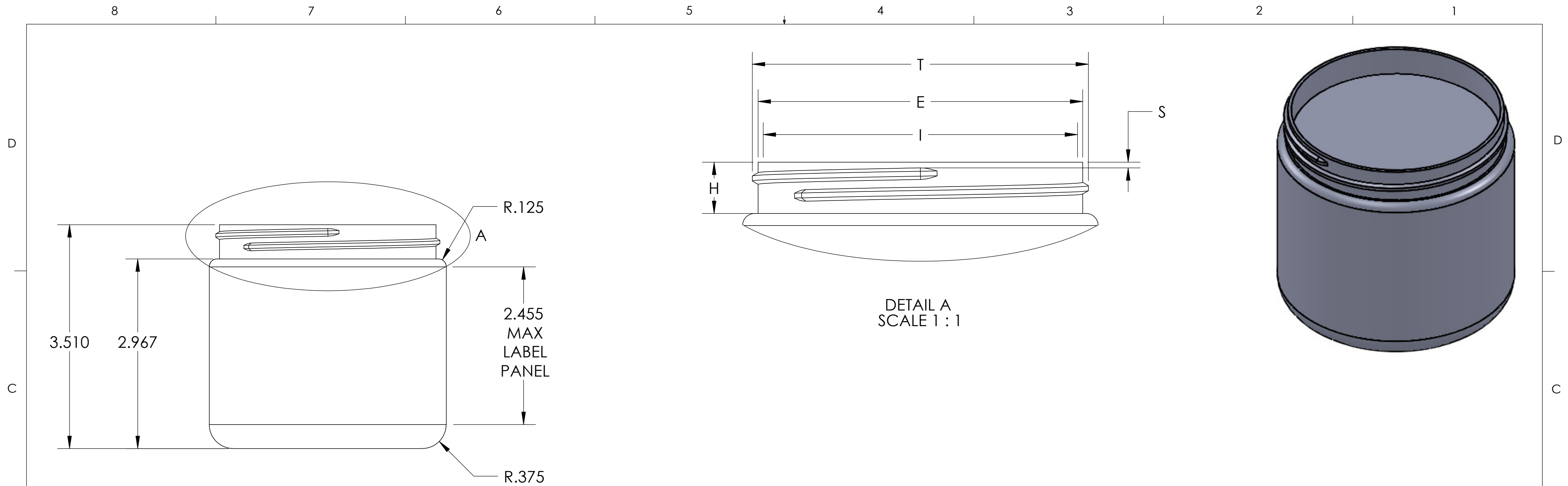


POLYBATCH[®] COLOR White LL8425

- Regulatory Info:** POLYBATCH[®] LL8425 is made only from FDA recognized materials regulated according to 21 CFR 175.300, 177.1520(c), 178.2010, 178.3297, and 184.1191.
- Storage:** Although no known shelf life has been determined for this concentrate, A. Schulman recommends that inventories are rotated and used within 12 months of purchase for optimum performance.
- Packaging:** POLYBATCH[®] LL8425 is typically packaged in polyethylene lined gaylords or in polyethylene bags.
- Safety:** POLYBATCH[®] LL8425 is not known to contain any hazardous materials as outlined by current OSHA regulations. Please refer to the MSDS for additional safety information.

Reported values pertain only to natural resins: pigmenting may vary properties. Pellet cut, size, color, and other properties may vary depending on the manufacturing location.

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H	OFC tol incr'd (11), 19-OCT-15, S.Byrne

Neck Finish: L89SP400		Disclaimer: Alpha Packaging assumes no responsibility for form, fit and function of closures, accessories, and/or shelf life and compatability of intended contents with this bottle.				
© Alpha Packaging Inc. Notes:	Min Thk	Color	Weight	Std Pack	Revisions	
	.015	All Colors	34.5 Gms ±3	168,Stack	A Std print format,04-17-00,SJ B Case pack was 144,09-16-04,SJ C Doc chg only, 10-11-05,sct D Oah was 3,490,01-20-06,sct E Revise pu config per ATC job# 1869 F Revise OAH, was 3,550 G Wt tol (+/-1g), 16-SEP-15, S.Byrne	
Neck Dimension:		UNLESS OTHERWISE SPECIFIED		TOLERANCES: DECIMAL ± .050 ANGULAR ± 1°		
T = 3.493 ± .018 E = 3.373 ± .018 H = .535 ± .015 I = 2.918 MIN S = .060 ± .015		OverFlow Capacity: 550 ml ± 15		APPROVED BY: CGR		
				ALPHA Packaging Inc. (314) 427-4300--(800) 421-4772 SCALE: 2:3 Drawn By: SCT Date: 05/07/99		
				16oz JAR, HDPE, 89-400 CT, IBM 16J89 H		
				SIZE DWG. NO. B 16JR89		
				MATERIAL: HDPE SHEET 1 OF 1		