



Technical Data Sheet

ARCEL[®] LD Resin

Particle Diameter

Resin: 98% 1.1 – 1.8 mm

Pre-puff: 98% 3.7 – 6.0 mm (1.1 - 0.80 pcf)

Color

Natural (white)

Shape

Spherical

Average VOC Content

7.8 wt%

Safety

Provide adequate exhaust ventilation during resin and pre-puff storage and processing as recommended in the Safety Guide for ARCEL[®] resin to avoid the hazardous accumulation of the pentane blowing agent.

Raw Bead Storage

Store unexpanded product below 4°C (40°F) until processed to avoid loss of expandability and potential hazardous accumulation of pentane vapor.

Expansion

ARCEL[®] LD resin can be continuously or batch expanded using conventional EPS expansion equipment. Some minor material handling modifications may be required. For molded part densities below 19.2 g/L (1.2 pcf), double-pass

or batch expansion will be required to attain desired bulk densities. ARCEL[®] LD resin has been expanded in continuous expanders ranging in size from 210 to 1,135 liters (55 to 300 gallons) as well as several sizes of batch expanders. Minimum ideal density potential is expected to be:

Nominal Aged Density Expectation	Density, g/L (pcf)
Continuous - Single Pass	17.6 (1.10)
Continuous - Double Pass	13.6 (0.85)
Batch - Single Pass	15.2 (0.95)

Freshly expanded ARCEL[®] resin is sensitive to the thermal/mechanical shock of an airveyor. Improper conveyance may significantly increase density. A minimum of 24 hours aging time is recommended before molding.

Molding

ARCEL[®] LD is relatively easy to mold. Expanded particles have been molded after several months. Conventional EPS fill guns as small as 19 mm can be used for bulk pre-puff densities of 16g/L or less; larger 21-22 mm fill guns and 25 mm ID fill hoses are recommended. The minimum recommended wall thickness is 18 mm, depending on design complexity and fill gun placement. Refer to the ARCEL[®] LD Tooling and Part Design Guide for more detailed information.




ARCEL[®] LD – Foam Physical Properties

Property	Test Method	Units	LD				
Density	ASTM-D3575	pcf	0.85	1.00	1.25	1.50	1.75
Compressive Strength at 10% Deformation	ASTM-D3575	psi	9.1	11.1	14.5	17.8	21.2
Compressive Strength at 25% Deformation	ASTM-D3575	psi	12.3	14.5	18.0	21.5	25.0
Tensile Strength at Break	ASTM-D3575	psi	29.1	33.9	41.9	49.8	57.8
Tensile Elongation at Break	ASTM-D3575	%	21.8	22.8	24.5	26.2	27.9
Compression Set	ASTM-D3575	%	40.1	41.0	42.6	44.1	45.7
Tear Strength at Max Load	ASTM-D3575	lb _f /in	5.6	6.5	8.0	9.5	11.0
Puncture Resistance	ASTM-D3763	ft-lb	6.0	7.1	8.9	10.7	12.5
Flexural Strain at Break	ASTM-C203	%	22.0	21.4	20.3	19.2	18.1
Flexural Stress at 5% Strain	ASTM-C203	psi	20.2	25.3	33.9	42.4	50.9

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