

DYLITE® Expandable Polystyrene Resins Shape and Specialty Grade F271CNL

Product Data Sheet

June 2023



Features:

- Highly consistent bead size
- High gloss characteristics
- Low energy consumption
- Fast molding cycles
- Food contact compliant

Applications:

- Seedling containers
- Bullet packs
- Shape molding that requires smaller beads
- Evaporative casting – Lost foam
- Thinner wall products
- Noodle bowls
- Soup containers
- Ice cream containers

Attributes:

- Good thermal insulation
- Superior temperature retention
- Smooth molded part surface
- Strong and lightweight
- Higher molecular weight
- Superior barrier resistance to spicy oils and foods
- Improved leak resistance for hot and cold beverages

Properties	Typical Values (English Units)	Typical Values (S.I. Units)
Product Properties:		
Bead Size (Enhanced C Bead) - Medium Fine (~85%)	0.017 – 0.023 inches	0.420 – 0.600 millimeter
Pre-expanded Particle Size @ 1.50 pcf (24 g/l) ~85% of raw bead distribution	0.049 – 0.071 inches	1.255 – 1.793 millimeter
Pentane Content	5.7 – 6.3% by weight	5.7 – 6.3% by weight
Bulk Density	38 – 40 pounds per cubic foot	608 – 640 grams per liter
Thermal Properties:		
Thermal Resistance (R-Value)	4.2 per inch	-
Thermal Conductivity ¹ (K-factor, Lamda) Foot (ft) British Thermal Unit (Btu) Degree Fahrenheit (°F) Degree Centigrade (°C)	0.235 Btu-in/(hr-ft ² -°F)	33.9 milli--Watts/(meters- °Kelvin)
Coefficient of Linear Expansion Inch (in) Centimeter (cm)	3.5 x 10 ⁵ in/in/°F	6.3 cm/cm/°C
Maximum Continuous Service Temperature	175 °F	80°C

¹ The thermal conductivity of expanded polystyrene at an average temperature of 75 F (24 C) is lowest at 3.5 pounds per cubic foot (pcf). It rises slightly at lower density until about 1.5 pcf where it increases rapidly. The rate of increase is much less at higher densities:

8,0 pcf (128 g/l) → 0,269 Btu-in/(hr-ft²-°F) ó 38.7 mW/(m-K)
12,0 pcf (192 g/l) → 0,276 Btu-in/(hr-ft²-°F) ó 39.8 mW/(m-K)

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AVAILABILITY

DYLITE expandable polystyrene (EPS) resins are produced at the Beaver Valley plant site (Monaca, PA) and are available in 2205 pound (1 metric tonne) bulk bags. The product type and batch number are clearly marked on each bag. Contact the Styropek sales office in your region.

QUALITY AND ENVIRONMENTAL MANAGEMENT SYSTEMS

DYLITE F271CNL resins are manufactured at an ISO 9001 and ISO 14001 registered facility.

STORAGE AND HANDLING

DYLITE F271CNL should be stored in a cool, dry place away from direct sunlight. This product can release pentane during expansion and molding. Pentane is a highly flammable gas in the presence of open flames, lit cigarettes, sparks, static electricity discharges, or heat. Prolonged or improper storage can result in deterioration of product properties. Care should be taken when handling and transferring product to prevent foreign matter contamination. The Styropek' Safety Data Sheet (SDS) and EPS Storage and Handling Safety Guide contain important safety information and should be reviewed before using the product.

PROCESSING CONDITIONS Recommended Conditions:

Minimum Density:

Batch pre-expander:
1.20 pounds per cubic foot or 19 grams per liter
Continuous pre-expander:
1.60 pounds per cubic foot or 26 grams per liter

Pre-expansion lube levels:

Resin comes pre-lubed with a target of 0.15% or 1500 parts per million (ppm)*

Pre-puff age time:

2 – 36 hours – depending on pre-expanded density and method of bead pre-expansion.

The F271CNL comes pre-lubed with FDA compliant additives. No further blending or mixing is required. Comprehensive assistance with processing conditions and Technical Services are available

FOOD PACKAGING STATUS

United States: DYLITE F271CNL complies with the U.S.A. Food and Drug Administration (FDA) Code of Federal Regulations 21 CFR 177.1640 for polystyrene and 21 CFR178.3010 for blowing agents. Thus, DYLITE may be used in the United States as an article or a component of an article intended for use in contact with food, subject to any limitations described in the regulations.

Europe: **DYLITE F271CNL** complies with the European Union's food contact regulations including the Framework Regulation (EC) No. 1935/2004, Regulation (EC) No. 2023/2006 (GMP) and Regulation (EU) No. 10/2011, as



amended, Annex I (including Table 1, Union list of authorised substances) and Annex II. Regulation (EU) No. 10/2011 is largely a consolidation of earlier EU regulations on food contact plastics. In particular, the compositional requirements of the previous Directive 2002/72/EC, as amended, continue to be complied with by DYLITE F271CNL. For a complete regulatory compliance statement please contact your STYROPEK representative.

Other Countries: For regulatory compliance information for other countries, please contact STYROPEK in your region.

ENVIRONMENTAL INFORMATION

STYROPEK DYLITE resins are biologically and chemically inert. **DYLITE does not contain CFC's (Chlorofluorocarbons)**. DYLITE resins are recyclable.



is the SPI resin code for polystyrene to identify material type for sorting and recycling. Significant information regarding EPS recycling is available from the <http://epsindustry.org/> Where recycling of EPS resins is not possible, disposal to landfill or incineration in accordance with applicable laws and regulations is recommended. Contact STYROPEK Styrenics Technology Center for further information on recycling and disposal.

LIFE CYCLE STUDIES – FOODSERVICE PACKAGING

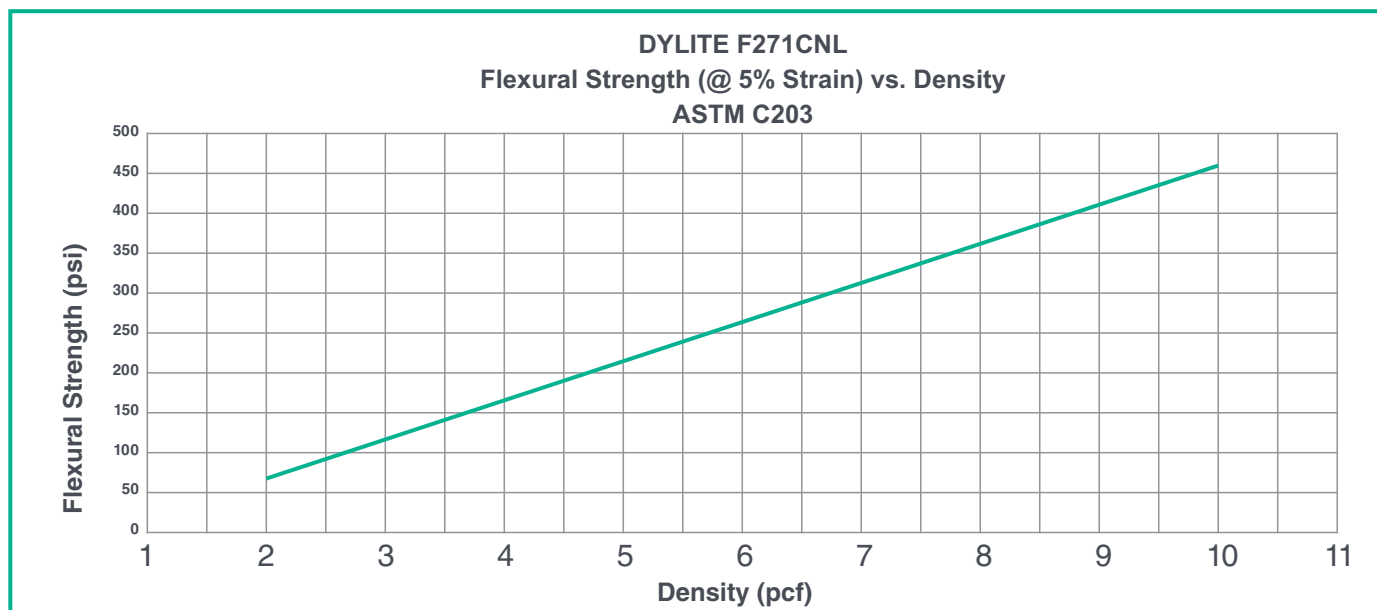
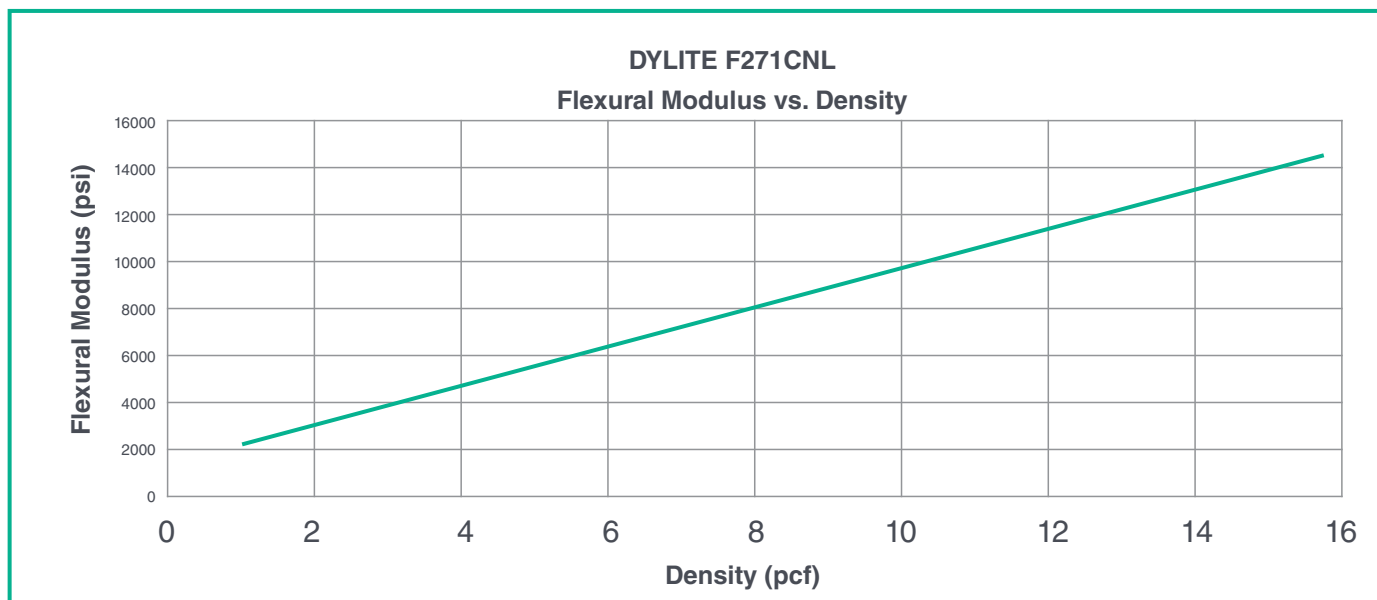
Life Cycle Studies detailing the environmental performance of everyday foodservice packaging products demonstrate that polystyrene foam products, in most cases have environmental burdens that are lower than or comparable to the alternative products studied.

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TYPICAL MECHANICAL PROPERTIES:



Flexural Strength - Pounds per square inch (psi) and Density – Pounds per Cubic Foot (pcf)

The product properties in the data sheet have been determined in accordance with the current testing methods of the American Society for Testing and Materials (ASTM), wherever possible.

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