

DYLITE® Expandable Polystyrene Resins Cup and Container Grade F271TNL5

Product Data Sheet

June 2023



Features:

- Primarily engineered for higher densities >48g/l (3.00pcf).
- Highly consistent bead size.
- High gloss characteristics.
- Low energy consumption.
- Fast molding cycles.
- Food contact compliant.
- Pre-lubricated – no blending¹

Applications:

- Drinking cups (hot and cold)
- Take-out containers
- Ice cream containers
- Labeled and printed cups
- Thin-wall cups at high density
- Noodle bowls
- Soup containers.

Attributes:

- Good thermal insulation
- Superior temperature retention.
- Less exterior condensation.
- Strong and lightweight.
- Superior taste and odor properties.
- Superior barrier resistance to spicy oils and foods.
- Improved leak resistance for hot and cold beverages.

¹ Additional lubricant may be required depending on final part application. Please contact a STYROPEK Technical Service Representative with any questions.

Properties	Typical Values (English Units)	Typical Values (S.I. Units)
Product Properties:		
Bead Size (T) - Fine	0.012 – 0.020 inches	0.30 – 0.50 millimeter
Pentane Content	4.6 – 5.2% by weight	4.6 – 5.2% 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 ² (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 x10 ⁻⁵ cm/cm/°C
Maximum Continuous Service Temperature	175 °F	80°C

² 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 F271TNL5 resins are manufactured at an ISO 9001 and ISO 14001 registered facility.

STORAGE AND HANDLING

DYLITE F271TNL5 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 Processing Conditions

Minimum Density:

Batch pre-expander:
2.80 pounds per cubic foot or 45 grams per liter
Continuous pre-expander:
3.00 pounds per cubic foot or 48 grams per liter

Pre-expansion lube levels:

Please call for Technical assistance for proper pre-expansion lube levels

Pre-puff age time:

2 – 8 hours

When proper pre-lubrication, pre-expansion, pre-puff aging and molding conditions. Results vary from customer to customer based on processing and molding conditions.

Comprehensive assistance with processing conditions and Technical Services are available from STYROPEK Styrenics Technology Center.

Recommend the plating of brass or brass alloy molds with either chromium or nickel at 0.001" and 0.002" thickness. The electro-less plating process has shown better results. Under certain conditions, F271TNL5 has shown to accelerate pitting and corrosion in un-plated molds. This is not applicable to molds made of aluminum or stainless steel. STYROPEK does not accept any liability for damage or repairs to molds.

FOOD PACKAGING STATUS

United States: DYLITE F271TNL5 complies with the U.S.A. Food and Drug Administration (FDA) Code of Federal Regulations 21 CFR 177.1640 for polystyrene and 21CFR178.3010 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.

Canada: Please be advised that STYROPEK has received a letter from the Health Products and Food Branch indicating no objection to the use in Canada of DYLITE F271TNL5 for a variety of food packaging applications. For further information please contact your STYROPEK representative.



Europe: DYLITE F271TNL5 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 F271T. Migration limits may apply. 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 [EPS Industry Alliance](#). 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

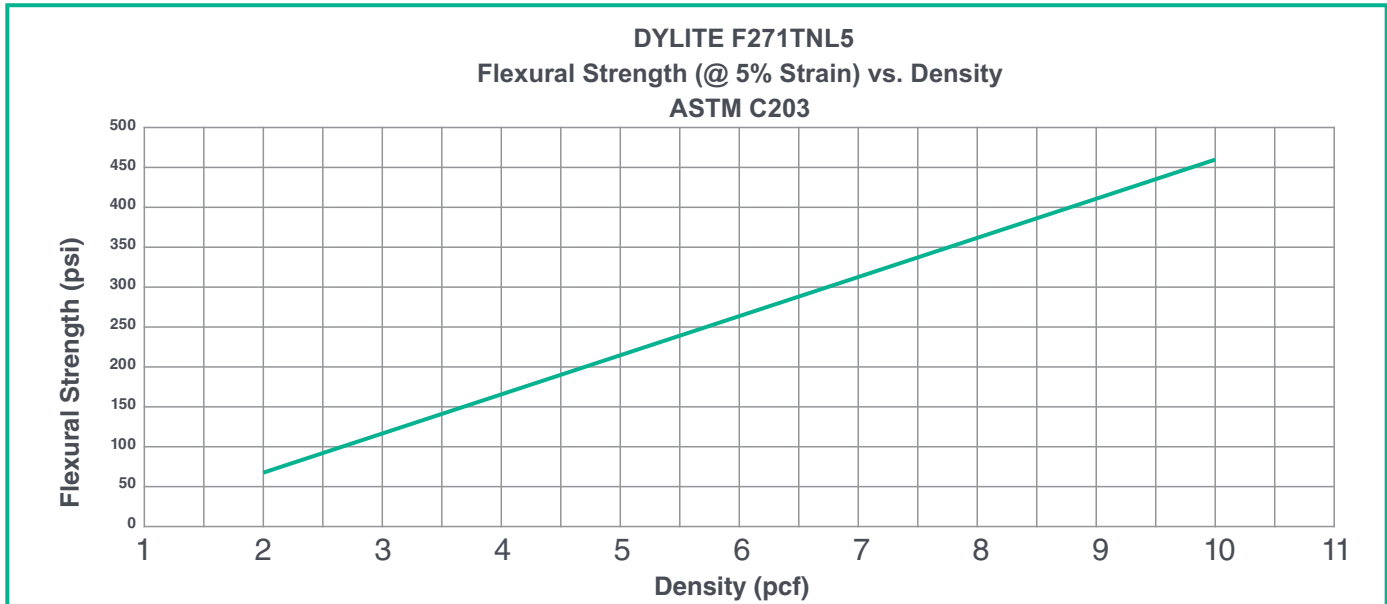
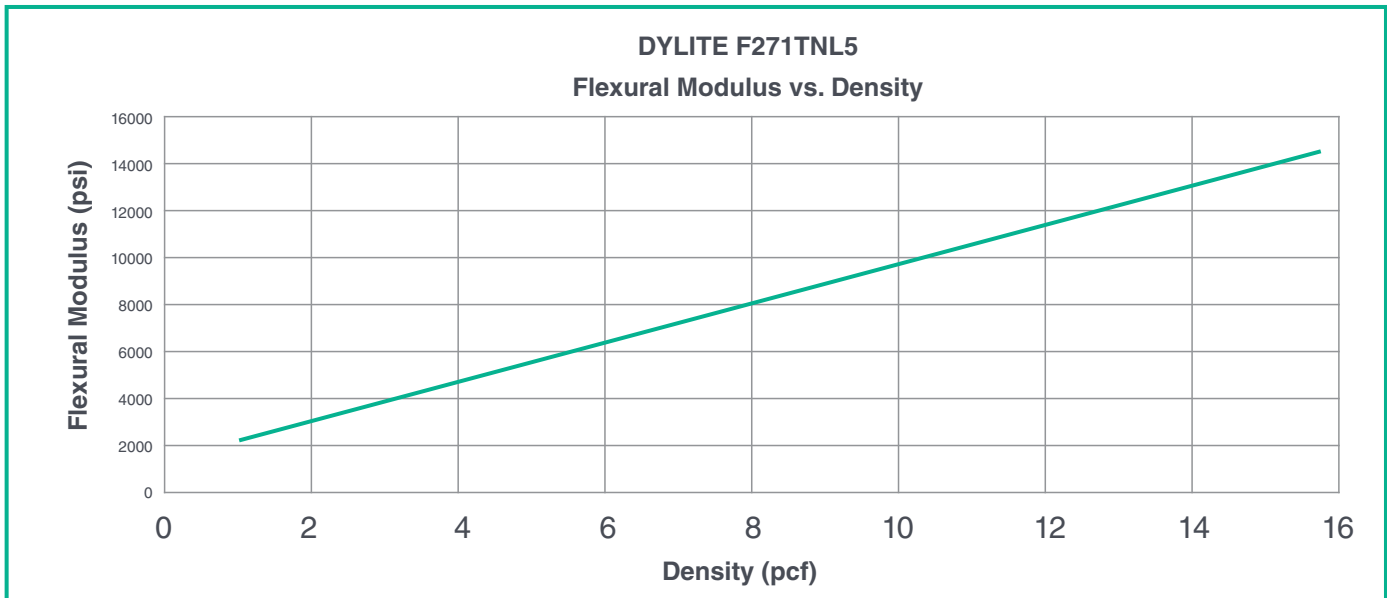
Life Cycle Studies detailing the environmental performance of everyday foodservice packaging products demonstrate that polystyrene foam products, in most cases have environmental burdens that are power than or comparable to the alternative products studied.

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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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