



# DOW™ Electrical & Telecommunications DGDK-6924 NT EXP1 High Density Polyethylene Cellular Insulation Compound

## Overview

DGDK-6924 NT EXP1 is a high density polyethylene compound designed for use in physical foaming processes where high expansion rates (40 - 70%) are required. This compound is designed to offer excellent high speed processability as given by low extrusion pressures and smooth insulation surface quality. Furthermore, since it is fully pre-compounded with all the necessary ingredients, DGDK-6924 NT EXP1 offers better dispersion of the nucleating agent allowing high expansion rates to be achieved with more consistent processability (capacitance and diameter). It is stabilized for long term cable performance in data cable applications.

### Applications:

Typical applications include LAN and data center cables.

### Specifications

DGDK-6924 NT EXP1 should meet the following material specifications:

- ASTM D 1248 Class A, Type III, Category 3
- ISO 1875-PE, KGHN, 45-D-045

Physical	Nominal Value (English)	Nominal Value (SI)	Test Method
Density <sup>1</sup>	0.952 g/cm <sup>3</sup>	0.952 g/cm <sup>3</sup>	ISO 1183
Melt Mass-Flow Rate (140°C/5.0 kg)	5.5 g/10 min	5.5 g/10 min	ASTM D1238
Hardness	Nominal Value (English)	Nominal Value (SI)	Test Method
Shore Hardness <sup>2</sup> (Shore D, 1 sec)	65	65	ISO 868
Thermal	Nominal Value (English)	Nominal Value (SI)	Test Method
Oxidation Induction Time (392°F (200°C))	> 50 min	> 50 min	ASTM D3895
Electrical	Nominal Value (English)	Nominal Value (SI)	Test Method
Dielectric Constant <sup>2</sup> (1 MHz)	2.30	2.30	IEC 60250
Dissipation Factor (50 Hz)	1.0E-4	1.0E-4	IEC 60250
Cured Properties	Nominal Value (English)	Nominal Value (SI)	Test Method
Tensile Strength <sup>3</sup>	3050 psi	21.0 MPa	IEC 60811-501
Tensile Elongation at Break <sup>3</sup>	1400 %	1400 %	IEC 60811-501
Extrusion	Nominal Value (English)	Nominal Value (SI)	
Melt Temperature	338 to 374 °F	170 to 190 °C	

### Extrusion Notes

DGDK- 6924 NT EXP1 can be processed using a range of commercial gas injection systems.

It is normally extruded with a target melt temperature of 170 - 190 °C.

Typical barrel temperatures required depend on extruder size and construction being made but a good starting point is:

- Feed zone: 150 - 160 °C
- Transition zone: 160 - 170 °C
- Injection Point: 185 - 200 °C
- Metering zone: 180 - 190 °C
- Cross head and Die: 200 - 210 °C

### Notes

These are typical properties only and are not to be construed as specifications. Users should confirm results by their own tests.

<sup>1</sup> On unannealed material from the melt flow rate extrudate

<sup>2</sup> Measured on compression moulded plaques

<sup>3</sup> Measured on extruded tape

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