AXELERON™ CS L-3364 NT CPD
High Density Polyethylene Solid Insulation Compound

Overview

AXELERON™ CS L-3364 NT CPD is a high-molecular weight, high-density polyethylene insulation compound ("CPD") specifically formulated to provide excellent oxidative stability, toughness, and abrasion resistance. It provides superior long term aging performance, especially in the more demanding Power over Ethernet (PoE) and grease-filled cable applications while providing excellent environmental and thermal stress-cracking resistance. In addition, AXELERON™ CS L-3364 NT CPD is designed for excellent processability for high-speed wire insulating extrusion processes.

AXELERON™ CS L-3364 NT CPD provides excellent performance across the full range of network data cable and telephone insulation applications. AXELERON™ CS L-3364 NT CPD is optimized to meet rigorous Telcordia requirements, as well as all major international age testing standards and specifications for use as both solid and foam/skin insulation. There is also considerable AXELERON™ CS L-3364 NT CPD use in a wide variety of other twisted pair, coaxial, hybrid data and power cable designs.

Specifications

AXELERON™ CS L-3364 NT CPD meets the following raw material specifications:

- ASTM D 1248 Type III Category A-4, Grade E8 and E9
- Federal LP-390 C, II-H, Grades 1 and 2, Category 4

Network & industrial ethernet data cable and telephone wire insulated with AXELERON™ CS L-3364 NT CPD, using sound commercial extrusion practices, should meet the cable specifications including but not limited to:

- ICEA S-116-732 Category 6 & 6A, ANSI/NEMA WC-66 Category 3-6A
- ANSI/TIA-568-C.2 Category 5E, 6, & 6A
- IEEE Specification: IEEE 802.3bt Type 1, Type 2, Type 3, Type 4
- REA PE 39 "Filled Telephone Cable" & REA PE 89 "Filled Telephone Cable with Expanded Insulation"
- Telcordia GR-421-CORE, Issue 1; 3 "Generic Requirements for Metallic Telecommunications Cables"
- ICEA S-84-608 "Telecommunications Cable; Filled, Polyolefin Insulated, Copper Conductor - Technical Requirements"

Physical	Nominal Value	(English)	Nominal Value	(SI)	Test Method
Density	0.945	g/cm³	0.945	g/cm³	ASTM D792
Melt Mass-Flow Rate (190°C/2.16 kg)	0.80	g/10 min	0.80	g/10 min	ASTM D1238
Environmental Stress-Cracking Resistance (ESCR)					ASTM D1693
122°F (50°C), 100% Igepal, F0	> 48.0	hr	> 48.0	hr	
Mechanical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Tensile Strength	3400	psi	23.4	MPa	ASTM D638
Tensile Elongation (Break)	500	%	500	%	ASTM D638
Thermal	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Brittleness Temperature [1]	-105	°F	-76.0	°C	ASTM D746
Oxidation Induction Time [2] (392°F (200°C))	170	min	170	min	ASTM D4565
Thermal Stress Crack Resistance - F0	> 96	hr	> 96	hr	ASTM D2951
Aging	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Retention of Tensile Elongation					ASTM D638
48 hrs : 212°F (100°C)	90	%	90	%	
4800 hrs : 239°F (115°C) [3]	> 95	%	> 95	%	
Retention of Tensile Strength					ASTM D638
48 hrs : 212°F (100°C)	90	%	90	%	
4800 hrs : 239°F (115°C) [3]	> 95	%	> 95	%	
Electrical	**Nominal Value**	**(English)**	**Nominal Value**	**(SI)**	**Test Method**
Volume Resistivity (73°F (23°C))	> 1.0E+15	ohms·cm	> 1.0E+15	ohms·cm	ASTM D257
Dielectric Constant (1 MHz)	2.32		2.32		ASTM D1531
Dissipation Factor [4] (1 MHz)	6.0E-5		6.0E-5		ASTM D1531

Form No. 400-00088932en
Rev: 2020-01-22

Extrusion	Nominal Value (English)	Nominal Value (SI)
Melt Temperature	425 to 500 °F	218 to 260 °C

Extrusion Notes

AXELERON™ CS L-3364 NT CPD provides excellent surface finish and good output rates over a broad range of extrusion conditions. AXELERON™ CS L-3364 NT CPD is typically extruded at melt discharge temperatures ranging from 425 to 500°F (220 to 260°C) using conductor preheats ranging from 230 to 290°F (110 to 140°C). Specific extrusion conditions can be recommended only when the application, processing speed and processing equipment details are known.

Notes

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

[1] F0

[2] Aluminum pan O/T testing of 0.25 mm film samples 80°C ETPR cable type filler was used.

[3] Tested on extruded wire 22AWG copper conductor with 0.021 inch wall thickness

[4] After 14 days Water Immersion at 23°C (73°F)

Form No. 400-00088932en
Rev: 2020-01-22

Product Stewardship

The Dow Chemical Company and its subsidiaries ("Dow") has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our Product Stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our Product Stewardship program rests with each and every individual involved with Dow products ─ from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

Medical Applications Policy

NOTICE REGARDING MEDICAL APPLICATION RESTRICTIONS: Dow will not knowingly sell or sample any product or service ("Product") into any commercial or developmental application that is intended for:

a. long-term or permanent contact with internal bodily fluids or tissues. "Long-term" is contact which exceeds 72 continuous hours;
b. use in cardiac prosthetic devices regardless of the length of time involved ("cardiac prosthetic devices" include, but are not limited to, pacemaker leads and devices, artificial hearts, heart valves, intra-aortic balloons and control systems, and ventricular bypass-assisted devices);
c. use as a critical component in medical devices that support or sustain human life; or
d. use specifically by pregnant women or in applications designed specifically to promote or interfere with human reproduction.

Dow requests that customers considering use of Dow products in medical applications notify Dow so that appropriate assessments may be conducted. Dow does not endorse or claim suitability of its products for specific medical applications. It is the responsibility of the medical device or pharmaceutical manufacturer to determine that the Dow product is safe, lawful, and technically suitable for the intended use. **DOW MAKES NO WARRANTIES, EXPRESS OR IMPLIED, CONCERNING THE SUITABILITY OF ANY DOW PRODUCT FOR USE IN MEDICAL APPLICATIONS.**

Disclaimer

NOTICE: No freedom from infringement of any patent owned by Dow or others is to be inferred. Because use conditions and applicable laws may differ from one location to another and may change with time, the Customer is responsible for determining whether products and the information in this document are appropriate for the Customer's use and for ensuring that the Customer's workplace and disposal practices are in compliance with applicable laws and other governmental enactments. Dow assumes no obligation or liability for the information in this document. **NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED.**

NOTICE: If products are described as "experimental" or "developmental": (1) product specifications may not be fully determined; (2) analysis of hazards and caution in handling and use are required; (3) there is greater potential for Dow to change specifications and/or discontinue production; and (4) although Dow may from time to time provide samples of such products, Dow is not obligated to supply or otherwise commercialize such products for any use or application whatsoever.

NOTICE: This data is based on information Dow believes to be reliable, as demonstrated in controlled laboratory testing. They are offered in good faith, but without guarantee, as conditions and method of use of Dow products are beyond Dow's control. Dow recommends that the prospective user determine the suitability of these materials and suggestions before adopting them on a commercial scale.

To the best of our knowledge, the information contained herein is accurate and reliable as of the date of publication, however we do not assume any liability for the accuracy and completeness of such information.

Additional Information

North America		**Europe/Middle East**	+800-3694-6367
U.S. & Canada:	1-800-441-4369		+31-11567-2626
	1-989-832-1426	Italy:	+800-783-825
Mexico:	+1-800-441-4369		
Latin America		**South Africa**	+800-99-5078
Argentina:	+54-11-4319-0100		
Brazil:	+55-11-5188-9000		
Colombia:	+57-1-219-6000	**Asia Pacific**	+800-7776-7776
Mexico:	+52-55-5201-4700		+603-7965-5392

www.dow.com

This document is intended for use within Africa & Middle East, Asia Pacific, Europe, Latin America, North America

Published: 2005-11-17

Form No. 400-00088932en
Rev: 2020-01-22