Dow Electrical & Telecommunications

Lower Signal Loss Achieved with RF Cable Insulation

Solutions that perform – Dow AXELERON™ CX B-1258 NT

A newly developed grade of low-density polyethylene (LDPE) resin for gas-injection foaming is available from Dow Electrical & Telecommunications (Dow E&T) specifically for radio frequency (RF) cable insulation applications. Dow AXELERON™ CX B-1258 NT is a new compound that demonstrates:

- Improved electrical performance with a lower dissipation factor
- Ease of mixing with rheology compatible with high-density polyethylene (HDPE) for manufacturing consistency
- Physical properties that enable construction of higher-quality cables with lower signal loss

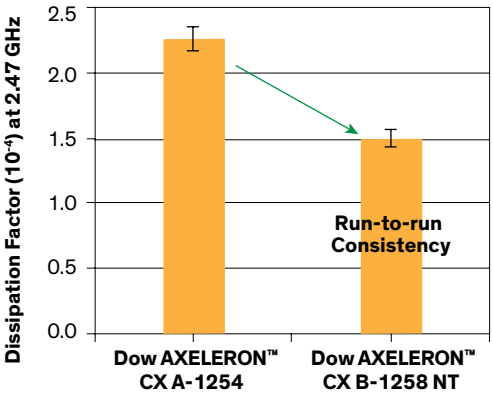
Physical Properties	Test Method	Values
Density, 23 °C, g/cm^3	ASTM D 792	0.922 g/cm^3
Melt Index, 2.16 Kg, g/10 min	ASTM D 1238	6.0 g/10 min
Tensile Strength, psi	ASTM D 638	1560
Tensile Elongation, %	ASTM D 638	500 %
Electrical		
Dielectric Constant, at 2.47 GHz	ASTM D 1531	2.27
Dissipation Factor, at 2.47 GHz	ASTM D 1531	0.00015

Typical properties for Dow AXELERON™ CX B-1258 NT.

Proven technology

An R&D-based heritage enables Dow E&T to constantly create or refine solutions for optimal end-use benefits. Dow AXELERON CX B-1258 NT is no exception. Validated at our in-house Global Technology Center as well as in trials with customers under actual manufacturing conditions, this foamed insulation exhibits best-in-class performance for electrical performance, robust manufacturing with run-to-run consistency and lower signal loss.

Dow AXELERON™ CX B-1258 NT: Low Dissipation Factor



RF Cable Continues to Require Differentiation

The increased use of wireless communication devices and the demand for bandwidth over wide-ranging cellular networks has led to a need for improved RF cables with minimum signal loss in the high frequency ranges. Cell towers utilizing RF cables are in service throughout the globe with an expected system lifetime spanning decades. Reliable RF cables that transmit stronger signals with lower losses will continue to be a crucial part of mobile networks for years to come.

The role of foam insulation in RF cables
RF cables used in wireless mobile networks are typically constructed with a foamed insulation that incorporates a blend of HDPE and LDPE which is expanded by a gas-injection process to create a foamed cell structure. The foam insulation plays a key role in signal transmission and strength. A better-performing insulation means higher-quality cable constructions that result in improved transmission with lower signal losses.

Dow E&T continues its strong tradition based on 40 years' experience in bringing superior insulation compounds to the telecom industry. We are committed to supplying the industry with continuous improvement and innovation. Dow E&T provides solutions that perform – for today's telecommunications needs and for tomorrow's challenges.

AXELERON™

DOW INSIDE