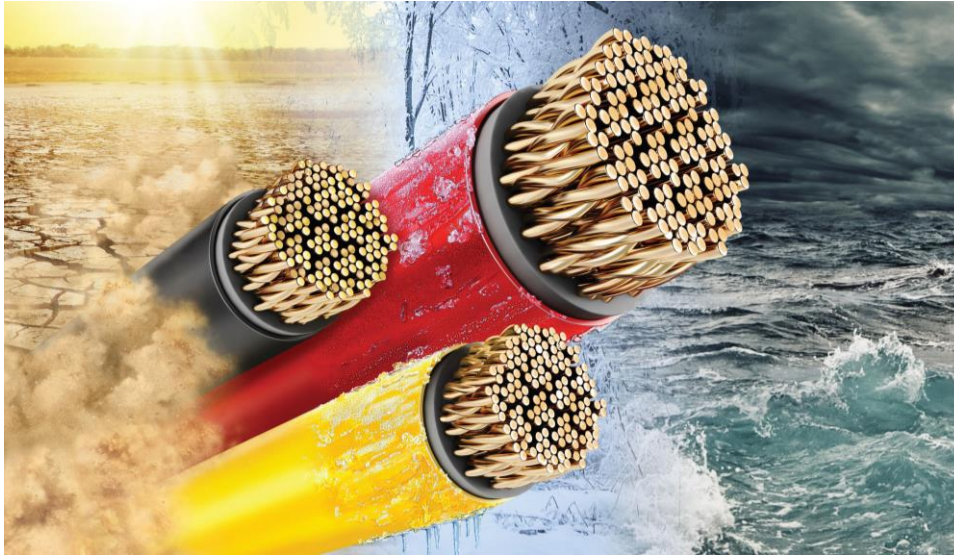


SOLUTION DATA SHEET

Adding Value with a Polymer Solution for Wire and Cable



<p>Markets</p>	<p>Robotic and other industrial cables; Data, energy, and communication cables; Construction, electric vehicle (EV) charging and transportation cables; Mining and marine cables</p>
<p>Polymer</p>	<p>ESTANE® thermoplastic polyurethane (TPU)</p>
<p>Key Benefits</p>	<ul style="list-style-type: none"> • Non-Halogenated Flame Retardancy (NHFR) • Sustainable alternative • Very good abrasion resistance • Flexibility and toughness

Lubrizol has an extensive portfolio of thermoplastic polyurethane (TPU) solutions commercialized as ESTANE® ZHF TPU which are widely used in wire and cable. These solutions make it easy to produce cable jacketing with an optimum design without sacrificing performance or regulatory compliance, while being halogen-free. The Lubrizol Engineered Polymers team of applications & material specialists and expert technicians have pooled efforts to develop a sustainable portfolio that can withstand the harsh

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conditions cables are subject to, and still meet current market needs and compliance requirements of UL and VDE industry norms.

One of the latest additions, **ESTANE ZHF 90AT8 technology**, has proven to be very versatile when applied in flame retardant (FR) wire and cable applications, being the most popular choice among our solutions of non-halogenated materials for cable sheathing. This has resulted in the offering of different versions of the same winning formula.

This FR technology has very good tear resistance and excellent abrasion while withstanding the most extreme temperatures. Given its nature to perform well in different environments, Lubrizol has focused on using this technology to expand the series and extend the durability and service life of valuable cable systems, catering for thick and thin cables.

Some of the key benefits of polyether based **ESTANE ZHF 90AT8** TPUs are listed below:

- High tensile strength
- Excellent mechanical properties and good abrasion resistance
- Good bacterial, oil and hydrolysis resistance
- Very good heat resistance (UL 105°C)

Product	Hardness (Shore A)	Main Applications	Key features
ESTANE® ZHF 90AT8L NAT 01	89	Automation, sensor, drag chain and robotic cables	Consistent VDE capable, non halogenated flame retardant
ESTANE® ZHF 90AT8H NAT 02	89	Automation, sensor, drag chain and robotic cables	V0 UL 94 certified and temperature rating of 105°C. Easy to extrude. Low MI VDE capable >25 MPa
ESTANE® ZHF 90AT8H NAT 03	89	Automation, sensor, drag chain and robotic cables	V0 UL 94 and temperature rating of 105°C. Easy to extrude. Low MI VDE capable >25 MPa. Reduced tackiness for high-speed extrusion (200 m/min +)

Table 1: Overview of new halogen-free, flame retardant grades for wire and cable

Lubrizol’s ESTANE ZHF TPU portfolio has been developed considering the latest trends for safer and regulatory-compliant materials while keeping up high standards of performance. Lubrizol engineered polymers exhibit superior abrasion and wear resistance for extended part service life compared to other elastomers and rigid plastics.

For more information, please visit our web site: www.lubrizol.com/Engineered-Polymers

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