

SOLUTION DATA SHEET

Safer and Regulatory-Compliant Material For Wire & Cable Applications



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

The importance of elastomers that are high-performing and offer durable solutions in the plastics industry to the next generation of connected smart machinery, and other emerging applications, continues to grow. ESTANE TPUs are widely used in wire and cable; Specifically, in the case of cable jacketing, ESTANE materials offer a variety of benefits that extend the durability and service life of valuable cable systems.

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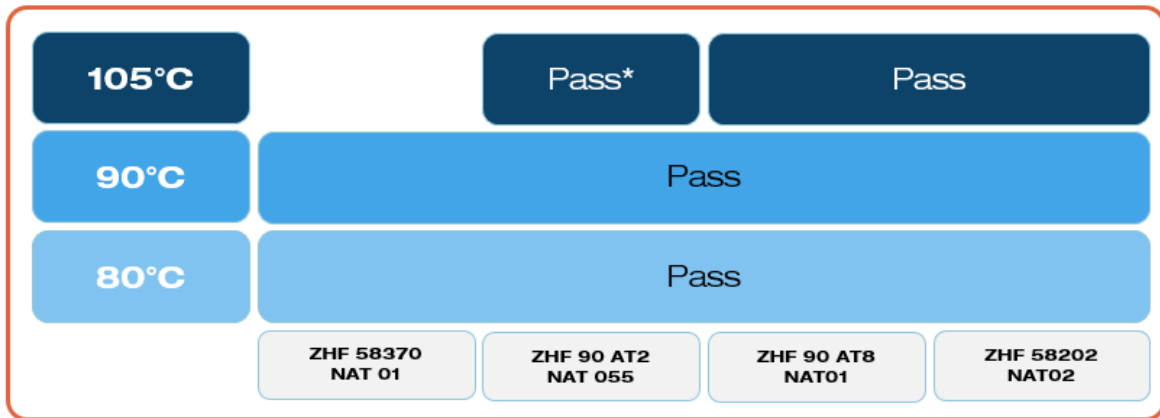
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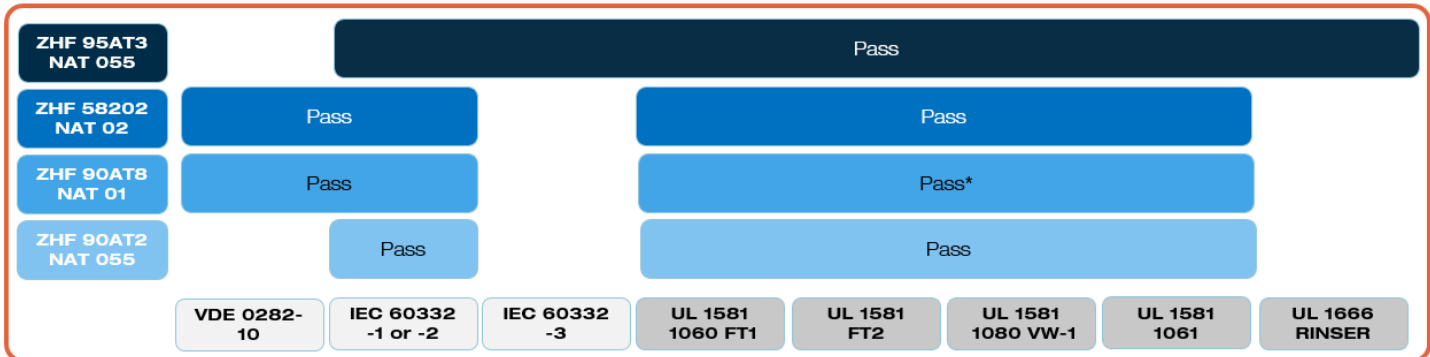
Lubrizol Engineered Polymers specializes in the field of polymers for cable protection that meet increasingly stringent legislation. Recently, Lubrizol has focused on expanding the ESTANE halogen-free portfolio. Environmental pressures in certain regions are driving flame retardant producers to offer solutions using a wide range of chemistries, Lubrizol experts have developed a new range of halogen-free advanced materials due to demands for a safer chemistry in markets like electronics, robotics or electric vehicles (EV).

ESTANE polymers offer a series of Non-Halogenated Flame-Retardant solutions especially designed to meet current market needs and compliance requirements of UL and VDE industry norms. One of the last additions, **ESTANE ZHF 90AT8H**, has high tensile strength, outstanding mechanical properties and cut-through resistance. It has good resistance to microorganisms and hydrolysis and has excellent abrasion while withstanding the most extreme temperatures.



*Initial tensile strength or elongation not met.

Figure 1: Overview of UL Temperature Rating of New ESTANE ZHF Developments



*Depending on Cable construction or Product Variant

Figure 2: Flame Tests of New Developments

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Product	Hardness (shore A)	Main Applications	Key features
ESTANE® ZHF 58370	86	EV charging cables. Automation and robotics	Low smoke/toxicity, very low gas conductivity below 10 μ S/mm + pH (EN 50620 + IEC 62893). Easy to extrude
ESTANE® ZHF 58202	89	Automation, robotics and EV charging cables	Low smoke/toxicity, very low gas conductivity + pH (EN 50620 + IEC 62893). Easy to extrude
ESTANE® ZHF 90AT8H	89	Automation, sensor, drag chain and robotic cables	V0 UL 94 certified and temperature rating of 105°C. Easy to extrude
ESTANE® ZHF 90AT2	91	Automation cables	Low smoke and consistent FT-2 for thin cables
ESTANE® ZHF 95AT3	95	Data cables	Able to pass cable bundling test (dependent on cable construction)

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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