

# SILTEM™ RESIN

## A NON-HALOGENATED POTENTIAL ALTERNATIVE TO FLEXIBLE FLUOROPOLYMERS

Environment, Human Health, Safety, and Security (EHSS) concerns surrounding halogen-containing materials have created intense regulatory and supply pressure on the fluoropolymer industry.

Fluoropolymers such as ETFE, FEP and PVDF are used in diverse applications due to their durability (heat, chemical, UV resistance) and flexibility. However, many of these products have come under global regulatory pressure due to the use of fluorosurfactants (PFAS) and their negative impact to the environmental footprint.

Non-halogenated SILTEM resins are easy to extrude amorphous copolymers with no intentionally added PFAS. They provide excellent high-heat performance, processability and durability without using fluorosurfactants. These advanced materials can be considered for potential use in a variety of industries and applications including transportation, aerospace and telecommunication cables/wires.

### POTENTIAL BENEFITS OF SILTEM RESINS

Non-fluorinated, with no intentionally added PFAS

- Compliant with flame, smoke and toxicity regulations (FAR 25.853)
- Compliant with certain transportation and infrastructure regulations

### Process and cost efficiency (vs fluoropolymers)

- Ease of processing
- Low corrosiveness, improved cost of ownership
- Low density, lower weight parts

### Durable in a range of harsh environments

- Durability with high service temperatures
- UV stable
- Excellent chemical resistance
- Highly durable in high-radiation environments



HEAT  
RESISTANCE



RADIATION  
RESISTANCE



CHEMICAL  
RESISTANCE



UV  
RESISTANCE

## SILTEM™ RESIN MATERIAL PROPERTIES

SILTEM resin is an amorphous polyetherimide-siloxane (PEI-Si) copolymer that is easily extrudable. The combination of silicone elastomer (Si) with ULTEM™ resin (PEI) provides flexibility with high heat performance.



SILTEM Resin		
STM1500	STM1600	STM1700
Lower Heat	Medium Heat	Higher Heat
Higher Flexibility	Balanced	Higher Stiffness

Features		SILTEM Resin			Fluoropolymers		
		STM1500	STM1600	STM1700	FEP	ETFE	PVDF
Non-halogenated		++	++	++	-	-	-
pH of combustion gases	IEC 60754-2	5.7	5.8	5.9	2.3	2.6	1.82
FR (LOI)	ASTM D2836	48	48	48	90	31	44
Smoke density	ASTM E665	0	0	+	+	-	-
Smoke toxicity		+	+	+	-	-	-
Flex Modulus	ISO 178	450	1200	2200	600	1100	1200
Tensile elongation	SABIC internal	150	120	80	>200	>200	>1000
Abrasion		-	0	0	0	+	+
Dielectric constant	100Hz - 1MHz	3.1	3.1	3.1	2.0	2.7	9
Processing		++	++	++	-	-	-
Density	g/cm <sup>3</sup>	1.18	1.19	1.20	2.10	1.75	1.78
Cost impact	\$/ liter	0	+	+	0	+	+
Service Temperature	°C	130	150	150	200	155	150

++ Very good + Good 0 Neutral - Poor

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