Technical data sheet

RavaSafe® ZH-LSF 61F

***RavaSafe® ZH-LSF 61F** is a thermoplastic zero halogen, low smoke flame retardant compound designed for indoor/outdoor optical fiber cables sheathing.*

This compound combines excellent processing, good mechanical properties and allows low friction surface.

This solution is UV stabilized, has a very good chemical resistance and good low temperature behavior.

Technical properties:

Physical and Mechanical Properties	Typical Value	Units (SI)	Test Method
Density, 23°C	1,53	g/cm³	ISO 1183-1 (ASTM D792)
Melt flow index (150°C /21,6kg)	4,2	g/10 min	ISO 1133 (b)
Hardness (15 seconds)	48	Shore D	ISO R 868 (ASTM D2240)
Water immersion test (7d @ 70°C)	0,5	mg/cm²	IEC 60811-402
Tear strength 23ºC	4,4	N/mm	BS 6469-99.1
Unaged mechanical properties (200 mm/min)			
Tensile strength	11,7	MPa	IEC 60811-501
Elongation at break	160	%	
Thermal ageing 7 days at 120°C			
Tensile strength variation (Δ)	6	%	IEC 60811-501
Elongation at break variation (Δ)	-10	%	
Thermal Mechanical Properties			
Hot Pressure Deformation (6h @ 90°C)	< 50	%	IEC 60811-508
Elongation at break (-40°C)	> 30	%	IEC 60811-505
Oil resistance test 4h at 70°C (IRM 902 – immersion)			
Tensile strength variation (Δ)	-35	%	IEC 60811-404
Elongation at break variation (Δ)	-22	%	

UV – Resistance – UV SEPAP	Typical Value	Units (SI)	Test Method
Tensile strength variation 0 to 1000 hours (Δ)	-13	%	NF EN 50289-4-17 (method C)
Elongation at break after 1000 hours	126	%	
Elongation at break variation 0 to 350 hours (Δ)	-1	%	
Elongation at break variation 350 to 1000 hours (Δ)	-9	%	
Elongation at break variation 0 to 1000 hours (Δ)	-11	%	

Chemical Resistance	Typical Value	Units (SI)	Test Method
Resistance to HCl 1 N 28 days at 23°C			
Tensile strength variation (Δ)	25	%	IEC 60811-501
Elongation at break variation (Δ)	15	%	
Resistance to NH_4OH 1 N 28 days at 23°C			
Tensile strength variation (Δ)	37	%	IEC 60811-501
Elongation at break variation (Δ)	12	%	
Resistance to NaOH 1 N 28 days at 23°C			
Tensile strength variation (Δ)	26	%	IEC 60811-501
Elongation at break variation (Δ)	16	%	
Resistance to Isooctane 14 days at 23°C			
Mass variation (Δ)	5	%	IEC 60811-501
Resistance to Kerdane 14 days at 23°C			
Mass variation (Δ)	13	%	IEC 60811-501

Flammability	Typical Value	Units (SI)	Test Method
Oxygen Index	39	%	ISO 4589-2 (ASTM D2863)
Temperature Index	> 310	°C	ISO 4589-3
Halogen content	< 0,5	%	IEC 60754-1
Acid gas emission			
pH	> 4,3	/	IEC 60754-2
Conductivity	< 2,5	µS/mm	IEC 60754-1
Smoke density measurement			
Smoke density – Flaming mode (1,1 mm) Ds max	71		ASTM E 662
Smoke density – Non Flaming mode (1,1 mm) Ds max	143	/	

Recommended extrusion profile:

Extrusion Temperatures	Zones							
	Z1	Z2	Z3	Z4	Z5	Collar	Head	Die
Temperature (Imperial)	266°F	284°F	302°F	320°F	320°F	329°F	338°F	338°F
Temperature (SI)	130°C	140°C	150°C	160°C	160°C	165°C	170°C	170°C

RavaSafe® ZH-LSF 61F *is a product able to run on standard extruders, based on low compression screw and head. This compound is supplied in aluminium foil bags. Pre-drying is not required before extrusion process.*

RavaSafe® ZH-LSF 61F *is colourable. A full range of specific colour masterbatches (RAVACOLOR™) and additive masterbatches (RAVABOOST™) are available.*
For any further information, please contact Ravago W&C.
The material description is subject to changes during the validation period of the product.