SYPOLYTECH
The finest compounder

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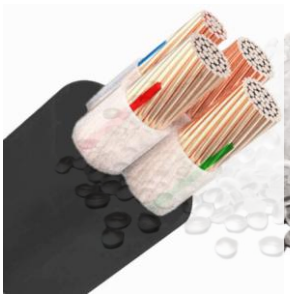
Production Code	**SYP-120R**	**Issued**	2025-05-19
Type of Product	Silane crosslinkable Polyethylene, XLPE for low voltage cables	**Rev.**	0
Main Application	Insulation of power, control and instrument cables - Long-duration extrusion stability		
Related Standard	IEC 60502-1		
Description	SYP-120R is a silane-grafted crosslinkable polyethylene compound designed for the insulation of power, control, and instrument cables. It offers excellent extrudability at high output rate, along with good mechanical properties and outstanding dielectric properties. SYP-120R is formulated to improve extrusion stability and reduce the occurrence of scorch and gel.		



Property	Unit	Specification	Typical Value	Test method
Physical properties				
Specific gravity	-	-	0.923	ASTM D 792
Tensile strength [Min.]	N/mm^2	12.5	29.5	IEC 60811-501
Elongation at break [Min.]	%	200	800	IEC 60811-501
Thermal property				
Aging condition - 136°C/168hrs				
Tensile strength after aging - Variation [Max.]	%	±25	+5	IEC 60811-401
Elongation at break after aging - Variation [Max.]	%	±25	-8	IEC 60811-401
Cross-linking property				
Test condition - Hot: 200°C, 20N/cm^2 load, 10min Set: after cooling				
Hot elongation under high temperature [Max.]	%	175	75	IEC 60811-507
Set deformation after cooling [Max.]	%	15	0	IEC 60811-507
Electrical property				
Volume resistivity - Thickness 1mm [Min.]	Ω·㎝	1.00E+16	5.70E+16	ASTM D 257
Rheological property				
MI (Melt flow index) - 190°C/2.16kgf [Min.]	g/10min	-	2.7	ASTM D 1238

Environmental regulation

RoHS I - Analysis by XRF

Material	Pb	Cd	Cr(6+)	Hg	PBBs	PBDEs
Content (PPM)	Not detected	Not detected	Not detected	Not detected	Not detected	Not detected

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Package

Unit packing size - Available	25kg	500kg	1,000kg	Special weight - ( )kg		
Packing material	PP bag	PP bag with PE inner film	PP bag with Al inner film	Octagon Box with Al inner film	Tank lorry	Other
Suggestion of storage condition	This compound should be stored in a place away from direct sunlight and moisture, to prevent damage to the packaging, and it is recommended to store it in a place where the ambient temperature does not exceed 40°C.					
Shelf life of compound	The recommended storage period for products sealed in aluminum packaging is up to 12 months. However, the product's shelf life may vary depending on storage conditions.					

Proposed extrusion conditions

Preheating method	It is recommended that the material be preheated to 60°C/4hrs prior to extrusion. Preheating is essential to remove residual moisture and to enhance the stability of material flow during the extrusion process.
Additional M/B - Color, Catalyst, FR..,	When using Color M/B, the addition level should be kept below 3%. Excessive loading may adversely affect the crosslinking properties.
Recommended extruder	A 90 mm single-screw extruder (compatible with 80 to 120 mm diameters), equipped with either a full-flight screw or a barrier mixing (BM) screw
Screw information (L/D, C/R)	L/D ratio: 25:1 (recommended range: 24:1 to 30:1) Compression ratio (C/R): 2.5:1 (suggested range: 2.0:1 to 3.0:1)
Miscellaneous	Remaining XLPE materials should be properly sealed and stored after use, as XLPE is highly sensitive to atmospheric moisture, potentially causing surface quality defects.

Temperature profile / 80mm extruder

Unit: °C

Cylinder 1	Cylinder 2	Cylinder 3	Cylinder 4	Neck	Head	Die
160±5	175±5	190±5	200±5	210±5	210±5	Gas torch allowed

* The temperatures listed above are typical processing conditions and may require adjustment depending on the extruder and screw specifications.

Remark

Key features	Process stability, Continuous extrusion, Long-term thermal stability, Moisture crosslinking
Advanced features	Smooth surface, Better flexible, Low die build-up