



**PROMINVEST PLASTIC**

## TECHNICAL INFORMATION

**Halogen free flame retardant compound**

**April 2020**

# Alovin<sup>®</sup> 110-4

### **Description**

Alovin<sup>®</sup> series are halogen free thermoplastic compounds with good processing quality, high extrusion performance and low smoke characteristics.

Alovin<sup>®</sup> 110-4 is sheathing compound for low voltage cables, where cracking resistance is critical.

Alovin<sup>®</sup> 110-4 was designed according to EN 50363-8 type TM 7, VDE 0207 HM2-HM4, BS 7655 LTS 1-2-3-4, IEC 60502-1 ST-8.

### **Technical characteristics**

<b>Property</b>	<b>Test method</b>	<b>Unit</b>	<b>Typical value</b>
<i>Density</i>	EN 60811-606	g/cm <sup>3</sup>	1,50
<i>Hardness at 15"</i>	ISO 868	Shore D	58
<i>Tensile strength</i>	EN 60811-501	N/mm <sup>2</sup>	17
<i>Elongation at break</i>	EN 60811-501	%	200
<i>Tear Strength</i>	BS 6469	N/mm	15
<i>Tensile properties after thermal ageing, 7 days at 135 °C</i>	EN 60811-401		
- <i>variation of tensile strength</i>		%	- 5
- <i>variation of elongation at break</i>		%	- 10
<i>Water immersion test, 7 days at 70 °C</i>	BS 6469		
- <i>variation of tensile strength</i>		%	- 15
- <i>variation of elongation at break</i>		%	- 45
<i>Oxygen index</i>	ISO 4589	% O <sub>2</sub>	37
<i>Flammability (3.2 mm)</i>	UL-94		V-0

<i>Hot pressure test at 105°C</i>	EN 60811-508	%	15
<i>Melt Flow Index (150°C/21,6 kg)</i>	ISO 1133	g/10 min	4
<i>Volume Resistivity 20°C</i>	ASTM D257 Electrodes	Ω·cm	1•10 <sup>15</sup>
<i>Water absorption</i>	EN 60811-402	mg/cm <sup>2</sup>	0,5
<i>Emission of Halogen acids</i>	EN 50267-2-1/IEC 60754-1	%	0
<i>pH</i>	EN 50267-2-2/IEC 60754-2		5,4
<i>Conductivity</i>	EN 50267-2-2/IEC 60754-2	μS/mm	0,60
<i>Cold bend</i>	BS 2782	°C	- 50

### ***Storage and preliminary drying***

If stored in dry, heated premises drying of Alovin® 110-4 isn't necessary. Preliminary drying of compound before the processing is obligatory if the package was damaged during the transportation (mechanical damage), or stored in humid conditions in open bags/containers (non-hermetic, after partial usage) or after long-term storage (over 6 months). Drying conditions: 4 – 6 hours at 60°C – 80°C.

### ***Extruder/screw***

To avoid material friction overheat and to achieve best processing speed, a screw with low compression and low friction load is recommended. Recommended screw compression rate – 1:1,2. Ideal extruder length is 24 screw diameters.

### ***Processing***

Alovin® series can be processed by tubing and stretch extrusion. During stretch extrusion the low-compression screw should be used so the additional material load can be avoided. Ideal stretch ratio: 1,5:1.

An extruder with an L/D ratio of 20-24 and compression ratio 1:1.2 or less is recommended.

Consistent with EVA-based masterbatches. Addition of approved color masterbatches, including black, up to a maximum of 1%, has no detrimental effect on the properties. It is recommended that all masterbatches should be thoroughly dried at 60°C for 8 hours or at 80°C for 4 hours in a de-humidifying dryer.

### ***Extruder temperature profile***

Depending on screw design the profile shown below may vary slightly.

Zone 1	Zone 2	Zone 3	Zone 4	Head	Die
135°C	145°C	150°C	160°C	160°C	165°C

**Packaging**

Compound is supplied in natural or black colored pellets, 3 – 4 mm long. Supplied in 700 kg big bags. Other types of packaging are available (30 kg bags, octabins).

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