



THERMODAN[®] TP-0870

Flexible, low-smoke, halogen-free, flame retardant thermoplastic compound for cable insulation and sheathing

This is a very flexible flame-retardant low-smoke thermoplastic compound. The compound meets the requirements of limited toxic and corrosive fume emission, being designed to meet the general requirements of BS 7655 Section 6.1 type LTS 1.

Test	Test method	Unit	Typical value
Physical properties and mechanical properties			
Density	BS EN ISO 1183-3	g/cm ³	1.46
Tensile strength	IEC 60811-501	N/mm ²	11.5
Elongation at break	IEC 60811-501	%	270
Tear Strength	BS 6469-99.1	N/mm	10
Hardness (N)	Shore A	-	96
Hardness (N)	Shore D	-	56
Typical ageing behaviour after 168 hours at 100°C			
Tensile strength	IEC 60811-401	% variation	-5
Elongation at break	IEC 60811-401	% variation	-12
Typical water immersion behaviour after 168 hours at 70°C			
Tensile strength	IEC 60811-401	% variation	-25
Elongation at break	IEC 60811-401	% variation	-12
Thermo mechanical properties			
Hot pressure deformation at 80°C	IEC 60811-508	%	30
Cold bend test at -30°C	IEC 60811-504	-	pass
Elongation at break at -30°C	IEC 60811-505	%	60 (pass)
Cold impact at -30°C	IEC 60811-506	-	pass
Fire & smoke properties			
Oxygen Index	BS ISO 4589-2	%	32
Temperature Index	BS ISO 4589-3	°C	270



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Recommended processing and handling conditions

Extruder

An extruder with an L/D ratio (length/diameter) of 15-24 and an extruder screw with a compression ratio 1.5:1 or less are recommended.

Extruder temperature conditions

It is important that the melt temperature is not allowed to rise above 170°C.

As a guide the following temperature profile is recommended:-

Zone 1	Zone 2	Zone 3	Zone 4	Head	Die
120°C	130°C	140°C	150°C	160°C	160°C

This profile will vary slightly depending on extruder type, head design and output.

Screw water temperature Depends upon screw design, but should be 30-50°C

Recommended screen pack 50 (mesh apertures per linear inch) or 300 micron

Head and tool design

The head and tools should be so designed as to allow streamlined flow of material. To obtain the optimum in physical properties in the case of tubing tools, draw down ratio of 1.5:1 is recommended to avoid internal stress.

Masterbatches

Addition of approved colour 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 drier.

Storage and shelf life

TP-0870 has an unlimited shelf life. However, the following precautions should be observed:-

- Packaging should remain sealed
- Avoid storage outside and in direct sunlight.

Form and packaging

Form – pellets

Packaging – the following possibilities are available:-

- Moisture resistant sacks containing 25kg.
- Boxes with a moisture resistant heat sealed liner containing approximately 125kg, 500kg or 1000kg.



Additional grade information

TP-0870 is available in the following versions:-

TP-0870N (natural colour)
TP-0870B (coloured black)

TP-0870NU (with a non-staining UV stabiliser added)
TP-0870BU (carbon black added to give UV stability)

The technical information contained herein is, to the best of our knowledge, believed to be accurate. However, SACO AEI Polymers makes no guarantee or warranty, and does not assume any liability, with respect to the accuracy or completeness of such information. Suitability of material for a specific final end use is the sole responsibility of the user. The data contained herein are typical properties only and are not to be used as specifications

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