



## TP564

### Thermoplastic, low-smoke, halogen-free, flame retardant compound for cable insulation and sheathing

This is a flame-retardant low-smoke thermoplastic compound which has been specially developed to meet the requirements of limited toxic/corrosive fume emission, having good moisture resistance and hot pressure performance. TP564 has good processability & high thermal crack resistance and has been specially developed to comply with the requirements of BS7655 6.1 LTS1, 2, 3 and 4; BS EN 50290-2-27 and HD 604 S1.

Test	Test method	Unit	Typical value	
<b>Physical properties and mechanical properties</b>				
Density	BS 2782 Pt. 6 Mtd 620A-D	g/cm <sup>3</sup>	1.35	
Melt flow rate (2.16kg at 150°C)	AEI test method	g/10 min	8.0	
Tensile strength	IEC 60811-1-1	N/mm <sup>2</sup>	17	
Elongation at break	IEC 60811-1-1	%	225	
Tear Strength	BS 6469	N/mm	9	
<b>Typical ageing behaviour after 7 days at 135°C</b>				
Tensile strength	IEC 60811-1-2	%Variation	+5	
Elongation at break	IEC 60811-1-2	% Variation	-5	
<b>Thermo mechanical properties</b>				
Hot pressure deformation at 90°C	IEC 60811-3-1	%	18	
Hot pressure deformation at 100°C	IEC 60811-3-1	%	30	
Cold bend test at -30°C	IEC 60811-1-4	-	pass	
Elongation at break at -30°C	IEC 60811-1-4	%	60 (pass)	
Cold impact at -30°C	IEC 60811-1-4	-	pass	
Thermal crack resistance @ 100°C	AEI test method	-	pass	
<b>Fire &amp; smoke properties</b>				
Oxygen Index	BS ISO 4589	%	37	
Temperature Index	BS ISO 4589-3	°C	>300	
Toxicity index	NES 713	-	1.3	
Halogen Acid Gas Evolution	IEC 60754-2	%	<0.5	
<b>Electrical Properties</b>				
Insulation Constant Ki at 90°C	IEC 60502	MΩ.km	1.8	
<b>Fluid Resistance</b>				
	Time (hrs)	Temperature °C	% Variation in TS	% Variation in EB
ASTM No2	168	23	-13	-30
ASTM No2	4	70	-30	-17
ASTM No2	4	100	-85	-17

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# TP564

## Recommended processing and handling conditions

### Extruder

An extruder with an L/D ratio (length/diameter) of 15-24 and an extruder screw with both low and high compression ratios are recommended.

### Extruder temperature conditions

It is important that the melt temperature profile is not allowed to increase above 160°C.

As a guide the following temperature profile is recommended:-

Zone 1	Zone 2	Zone 3	Zone 4	Head	Die
140°C	145°C	155°C	165°C	175°C	180°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) = 300 micron

### Head and tool design

The head and tools should be so designed as to allow streamlined of material. To obtain the optimum in physical properties in the case of tubing tools, the smallest possible draw down ratio 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 of TP564

It is recommended that all masterbatches should be thoroughly dried at 60°C to for 8 hours or at 80°C for 4 hours.

### Storage and shelf life

TP564 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

TP564 is available in the following versions:-

- TP564N (natural colour)
- TP564NU (with a non-staining UV stabiliser added)

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