



# COGEGUM<sup>®</sup> AFR/710

Thermoplastic halogen-free fire retardant compound for cable insulation

Polyolefinic based thermoplastic compound containing a fire retardant system that contributes to give the cable self-extinguish properties without halogenidric acids evolution; furthermore, toxic and corrosive gases emission and smoke generation are particularly reduced. These characteristics make this compound suitable in all applications where the fire behaviour of cable materials is one of the main concerns to be considered in establishing a high safety level in public places.

**Standard complying:** Cenelec HD 624.7 S1 and HD 624.6 S1, UNE 21123-4, VDE 0207 HM2, HM5 and HJ2, BS 6724, BS 7655 LTS 1 and LTS 3, CEI 20.11 M1, CEI 46.29, CEI 46.34, IEC 60092 SHF1, NF C 32062-1, NF C 32062-2

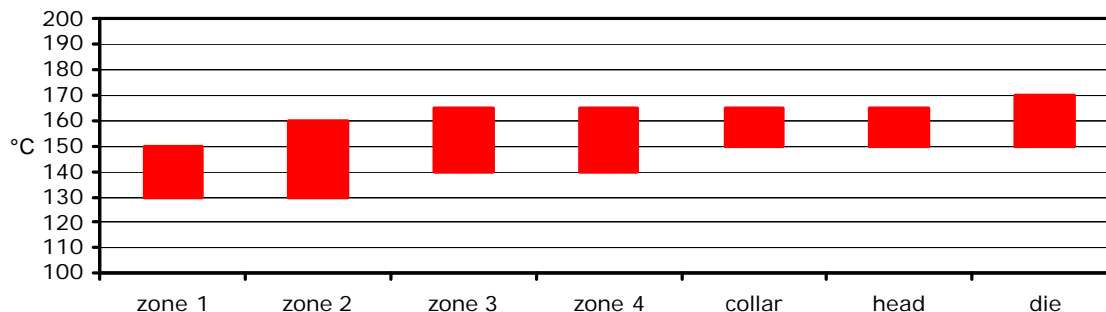
	typical value	unit	test method	
physical and mechanical properties	- Density at 23°C	1.43	g/cm <sup>3</sup>	ASTM D 792
	- Shore D hardness	44	-	ISO R 868
	- M.F.I., 150°C/21.6 kg	3.3	g/10'	Padanaplast
	- Unaged mechanical properties:			
	tensile strength	12.5	N/mm <sup>2</sup>	IEC 60811
	elongation at break	230	%	
	- Mechanical properties after ageing in air oven, 168 hours at 100°C:			
	variation on tensile strength	+6	%	IEC 60811
	variation on elongation at break	-20	%	
	- Mechanical properties after SAE 20 oil immersion, 4 hours at 70°C:			
	variation on tensile strength	-14	%	IEC 60811
	variation on elongation at break	-4	%	
	- Mechanical properties after water immersion, 168 hours at 70°C:			
	variation on tensile strength	-24	%	BS 6724
	variation on elongation at break	+15	%	
	- Mechanical properties after hydrocarbons immersion, 4 hours at 25°C:			
	variation on tensile strength	-5	%	CEI 20-11
variation on elongation at break	0	%		
- Hot pressure test at 80°C, max. penetration	< 50	%	IEC 60811	
- Heat shock test at 150°C	pass	-	IEC 60811	
- Cold bend at -25°C	pass	-	IEC 60811	
- Cold impact at -25°C	pass	-	IEC 60811	
- Water absorption, 24 hours at 100°C	2.0	mg/cm <sup>2</sup>	IEC 60811	
electrical properties	- Volume resistivity at 20°C	6.9 E 14	ohm x c m	IEC 60502
	- Volume resistivity at 70°C	5.5 E12	ohm x c m	IEC 60502
	- Insulation constant at 20°C	2500	Mohm x km	IEC 60502
	- Insulation constant at 70°C	20	Mohm x km	IEC 60502
burning properties	- Oxygen index	33	%O <sub>2</sub>	ASTM D 2863
	- Temperature index	250	°C	NES 715
	- Halogenidric acid emission	< 0.1	%	IEC 60754-1
	- Corrosivity of gases evolved (pH)	> 4.3	-	IEC 60754-2
	- Corrosivity of gases evolved (conductivity)	< 10	µS/mm	IEC 60754-2

tests made on pressed plate or extruded specimen

## Processing

Cogegum® AFR/710 can be processed using a 18-25 L/D extruder having an adequate thermoregulation of the barrel and a low compression screw (rubber or "halogen-free" type). Also PVC screws can be used, but with a possible decrease of the maximum output of the extruder. Polyethylene screws are not advisable.

The following temperature profile is suggested:



These conditions are indicative and may depend on the extruder and crosshead and tools design; however the melt temperature at the exit of the die cannot exceed 170°C.

If necessary only wide mesh net can be used (<100 mesh/cm<sup>2</sup>). Anyway the use of the breaker plate is advisable, in particular using low compression screws.

A wide range of colour masterbatches is available; it is suggested an addition of 1.5 % (approx.) by weight. At the indicated conditions our masterbatches do not influence the general properties of the compound.

## Storage

The compound must be stocked in the following conditions.

- closed and unbroken bags
- ambient temperature generally not exceeding 30°C
- avoid direct exposure to sunlight and weathering

The compound could be negatively affected by long stocking time. Solvay Padanaplast suggests its use within 6 months from the compounding date.

## Packaging

Cogegum® AFR/710 is available in multilayer moisture-proof 25 kg bags on 1250 kg pallets.

Our Technical Service is at your disposal for further information and consultancy.

## Disclaimer

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