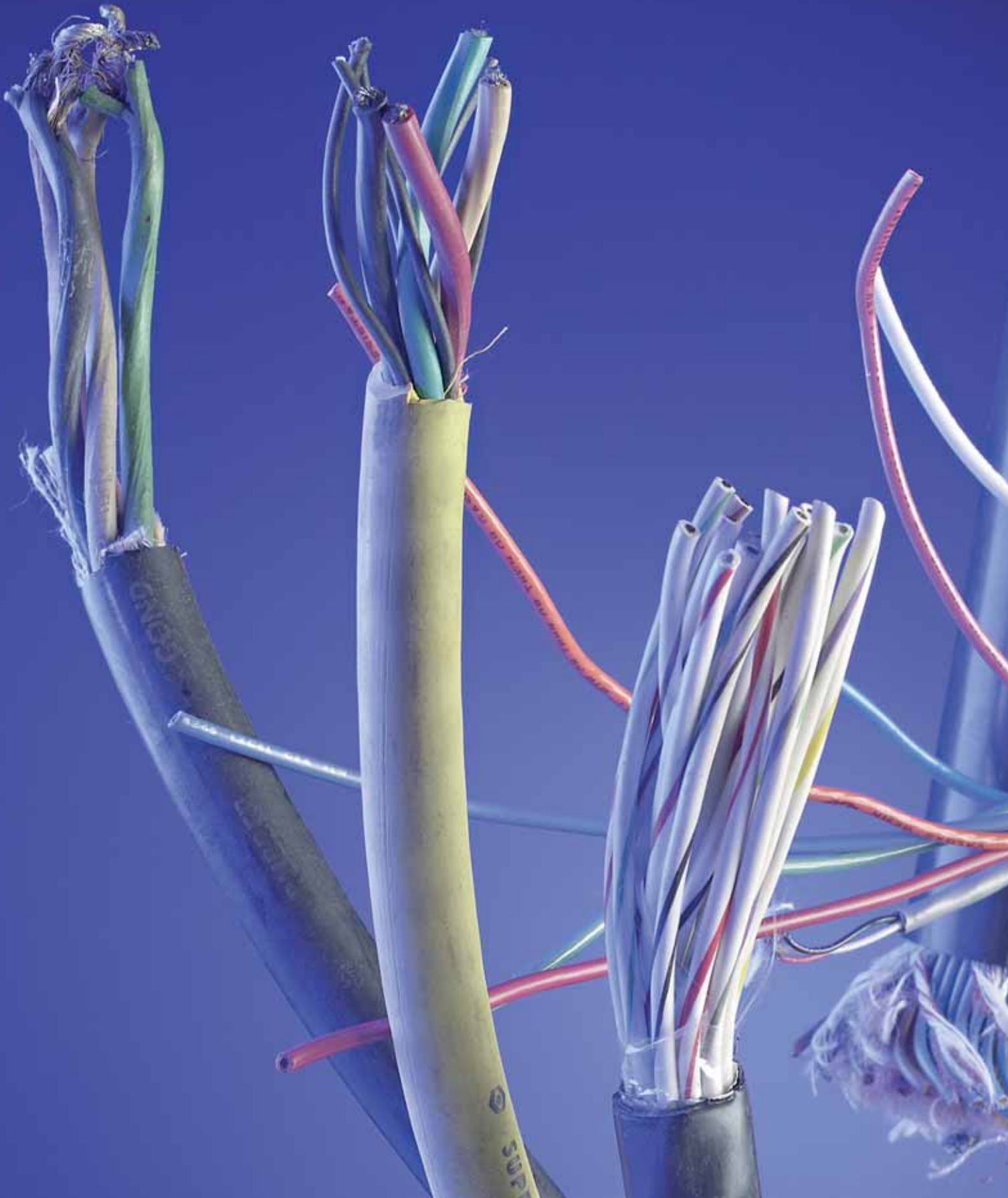


PolyOne[®]

ECCOH[™]
NON-HALOGEN COMPOUNDS

PRODUCT SELECTION GUIDE



ECCOH™ NON-HALOGEN COMPOUNDS

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PolyOne is a total polymer solutions provider for the wire, cable & pipe industry. With the ability to meet regulatory and product specifications globally, PolyOne can provide you with color & additive concentrates, flame-retardant compounds, cross-linked systems, thermoplastic elastomer compounds, compounding services or other specialty compounds.

DESCRIPTION

ECCOH™ thermoplastic non-halogenated compounds are low-smoke and highly flame-retardant, and will not emit corrosive gasses when burned. PolyOne's line of non-halogen flame-retardant ECCOH compounds – of which many are crosslinkable - are ideal for wire & cable sheathing and/or primary insulation applications.

ADVANTAGES

ECCOH compounds offer several advantages:

- ▶ Excellent flame-retardancy
- ▶ Halogen-free product
- ▶ Low smoke generation
- ▶ Low toxic gas emission
- ▶ Many grades are cross-linkable
- ▶ Available pre-colored, with antioxidant, UV stabiliser, etc.
- ▶ Wide range of applications including: data & telecom, LAN, power, shipboard, automotive, loose tube, mini-tube, etc.

APPLICATIONS

ECCOH compounds can be used in a wide variety of wire & cable applications and meets many global & local specifications:

- ▶ Power cable (BS 7835-00)
- ▶ Data cable (IEC 60332-1, IEC 60332-3)
- ▶ Telecommunications cable (IEC 332-1 IEC 332-3)

ECCOH™

NON-HALOGEN COMPOUNDS

GRADE RANGE

SHEATHING						
	ECCOH 5500	ECCOH 5501UV	ECCOH 5555	ECCOH 5575	ECCOH 5860	ECCOH 5865
Density (kg/m ³)	1510	1500	1500	1550	1540	1570
Processability	√√	√√√	√√	√√	√√√	√√
Stress Crack Resistance	√	√	√	√√	√	√
Operating Temperature (°C)	90	90	90	90	80	90
LOI (%)	34	35	34	37	37	45
Tensile Strength (MPa)	12	12	11	12	11	12
Elongation (%)	180	180	180	160	170	180
Knife Penetration	35% @ 90°C	11% @ 90°C	30% @ 90°C	40% @ 90°C	13% @ 80°C	24% @ 90°C
Mooney, 1+4 min, 140°C	25	25	30	32	35	41
Water Absorbtion (mg/cm ²)	1.1	0.068	1.1	1.4	1.86	3.1
Electrical Properties	√	√	√	√	√	√
Shore D	53	55	52	53	52	50
Oil Resistance 4h@70°C	-20% / 7%	-20% / 7%	-24% / 7%	-20% / 9%	-4.4% / 13.3%	-27% / 15%
Applications	Telecom HM4 General purpose sheathing	Power & telecom HM4. BS6724	Power, Telecom VDE0207 HM4 BS6724	Power cable BS6724 HM4 NFC32-323 VDE0207	Data & telecom Cat 5 FTP	Data & telecom UTP, F*TP, S- FTP IEC332-3
Properties	PVC replacement, easy to process.	Low die drool generation and low water absorption.	Good stress crack resistance.	Easy to process and good mechanical properties.	Easy to process and cost effective. Should you require greater flame retardancy, PolyOne advises ECCOH 5865.	Very good flame retardancy.

SHEATHING						
	ECCOH 5540/1	FR120	ECCOH 5606	ECCOH 5995	ECCOH 6600	ECCOH 6700
Density (kg/m ³)	1570	1480	1490	1540	1480	1250
Processability	√√	√	√√	√√√	√√√	√√√
Stress Crack Resistance	√√	√√√	√√	√√	√	√√
Operating Temperature (°C)	80	90	90	90	70	70
LOI (%)	42	35	35	40	35	39
Tensile (MPa)	10.5	12	11	11.5	11	9
Elongation (%)	160	180	180	155	180	500
Knife Penetration	37% @ 90°C	20% @ 90°C	31% @ 90°C	27% @ 90°C	30% @ 80°C	28% @ 90°C
Mooney, 1+4 min, 140°C	45.5	55	33	31	44	20
Water Absorbtion (mg/cm ²)	3	1	3.5	2.5	3.6	0.14
Electrical Properties	√	√√	√√	√√	√	√
Shore D	45	52	50	49	44	33
Oil Resistance 4h@70°C	-23% / 24%	-15% / 15%	-20% / 20%	-20.6% / -8.8%	3% / 10%	-20% / 15%
Applications	LAN Telecom	MV/HV/NRJ HM4.	HM4	Power HM4 Could also be used as insulation	LV insulation IEC BS6724 VDE0207	HM2 BS6724
Properties	Flexible, passes UL ageing at 113°C.	Excellent stress crack resistance and good wet electrical properties.	Good mechanical properties	Easy to process. If improved water resistance is required PolyOne recommends ECCOH 5924.	Flexible, crosslinkable	Flexibility similar to to that of rubber, good char formation.

INSULATION					
	ECCOH 1092	ECCOH 5200	ECCOH 6000	ECCOH 6150	ECCOH 6200
Density (kg/m³)	1350	1510	1360	1460	1430
Processability	√√√	√√	√√√	√√√	√√√
Operating Temperature (°C)	90	90	90 (125 when crosslinked)	90	105
LOI (%)	27	33	28	33	30
Tensile (MPa)	13	12	15	14	14
Elongation (%)	280	175	280	200	300
Knife Penetration	25% @ 105°C	25% @ 100°C	20% @ 105°C	25% @ 105°C	22% @ 105°C
Mooney, 1+4 min, 140°C	40	50	39	42	38 (1+4 min, 150°C)
Water Absorbtion (mg/cm²)	1.1	1.5	Non-measurable	0.16	0.9
Cut Through	√√	√√	√√	√√	√√√
Electrical Properties	√√√	√√√	√√√	√√√	√√
Shore D	54	45	55	53	56
Oil Resistance 4h@70°C	-8% / 25%	13% / 22%	-8% / 10%	-10% / 22%	-10% / 20%
Applications	Telecom & data Shipboard LV insulation	LV insulation General purpose insulation & sheathing BS7211 when crosslinked	Optical fibre LV insulation Automotive T3 when crosslinked	LV insulation Optical fibre Loose-tube. Mini-tube. Tight buffering	Optical fiber Tight buffering
Properties	Easy to process even for really thin extrusion, up to 0.1 mm. Good ageing properties	Easy to process and has excellent ageing properties. Crosslinkable. Meets IEC332-1	Very good heat, abrasion and chemical resistance.	High flame retardancy, low water absorption.	Excellent processability. Low water absorption and low shrinkage.

SPECIALITIES			
	ECCOH 3140	ECCOH 5924	ECCOH 5549
Density (kg/m³)	1580	1530	1590
Processability	√	√√√	√√
Operating Temperature (°C)	70	90	70
LOI (%)	41	39	49
Tensile (MPa)	11	11.5	12
Elongation (%)	180	170	160
Knife Penetration	35% @ 70°C	39% @ 90°C	45% @ 80°C
Mooney, 1+4 min, 140°C	47	42	50
Water Absorbtion (mg/cm²)	6.0	Excellent BS6724 = 0.7	3.8
Electrical Properties	√	√	√
Shore D	47	51	44
Oil Resistance 4h@70°C	-8% / 5%	28% / 22%	-33% / 23%
Applications	Sheathing LAN, telecom HM4	Sheathing BS7264 HM4	Sheathing
Properties	Very good flame retardancy, flexible	Very easy processing, good water resistance.	Excellent flame retardancy, good char formation

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