

ECCOH™5806

Product Description

ECCOH™ 5806 is a low smoke and fume non halogen flame retardant solution designed to comply with requirements for offshore, railway and marine applications where high performances to chemical environment are required. It combines outstanding cold properties and oil resistance performances at high temperature in standard oils as well as in IRM 903 with good flame retardancy.

ECCOH™ 5806 can be used thermoplastic or crosslinked via Dry Silane or E-beam technology to achieve higher temperature resistance.

General		
Material Status	Commercial Active	
Regional Availability	<ul style="list-style-type: none"> Africa & Middle East Asia Pacific Europe 	<ul style="list-style-type: none"> North America South America
Features	<ul style="list-style-type: none"> Halogen free Low Smoke generation Low Toxicity & low corrosivity Environmentally friendly 	<ul style="list-style-type: none"> Excellent processing Good heat resistance High flexibility Good flame retardancy
Uses	Wire&Cable	
Forms	Pellets	

Relevant properties for application in railway (EN50306), offshore, marine

Key Properties	Typical Value (Imperial)	Typical Value (SI)	Test Method
Tensile Strength 200mm/min, crosslinked	1740 psi	12 MPa	IEC 60811-501
Retention after heat ageing 10d at 120°C	125%	125%	IEC 60811-401
Elongation at break 200mm/min, crosslinked	160%	160%	IEC 60811-501
Retention after heat ageing 10d at 120°C	80%	80%	IEC 60811-401
Cold elongation -40°C, crosslinked	40%	40%	IEC 60811-505
Oil IRM 902 oil, 7d at 100°C, crosslinked			IEC 60811-404
Tensile Strength Retention	92%	92%	
Elongation at Break Retention	80%	80%	
Oil IRM 903 oil, 7d at 100°C, crosslinked			IEC 60811-404
Tensile Strength Retention	72%	72%	
Elongation at Break Retention	80%	80%	
Mud resistance, water based, 56d at 70°C, crosslinked			IEC 61892-4
Tensile Strength Retention	114%	114%	
Elongation at Break Retention	76%	76%	
Mud resistance, oil based, 56d at 70°C, crosslinked			IEC 61892-4
Tensile Strength Retention	82%	82%	
Elongation at Break Retention	76%	76%	
Oxalic Acid 1N, 7d at 23°C, crosslinked			IEC 60811-404
Tensile Strength Retention	105%	105%	
Elongation at Break Retention	106%	106%	
Hydroxide sodium 1N, 7d at 23°C, crosslinked			IEC 60811-404
Tensile Strength Retention	87%	87%	
Elongation at Break Retention	88%	88%	

These properties were measured once within PolyOne laboratory. However, it is mandatory that customers should conduct their own evaluations to ensure any compliance on cable.

ECCOH™5806

Technical Properties

Physical Properties	Typical Value(Imperial)	Typical Value (SI)	Test Method
Density, 23 °C	1.51 g/cm ³	1.51g/cm ³	ISO 1183-1 (ASTM D792)
MFR (150 °C/21.6kg)	2.5 g/10min	2.5 g/10min	ISO 1133, (b)
Mooney viscosity, ML (1+4) 140 °C	58	58	DIN53523 (ASTM D1646)
Mechanical Properties	Typical Value(Imperial)	Typical Value (SI)	Test Method
Tensile Strength 200mm/min, thermoplastic	1334 psi	9.2 Mpa	IEC 60811-501
Retention after heat ageing 10d at 120 °C, thermoplastic	126%	126%	
Elongation at break 200mm/min, thermoplastic	211%	211%	IEC 60811-501
Retention after heat ageing 10d at 120 °C, thermoplastic	60%	60%	
Tear Strength		6 N/mm	BS 6469:99-1
Hot pressure test 6h at 115 °C ,thermoplastic	8%	8%	IEC 60811-508
Hot pressure test 4h at 125 °C, crosslinked	34%	34%	IEC 60811-508
Flammability	Typical Value(Imperial)	Typical Value (SI)	Test Method
Oxygen index ¹	34%	34%	ISO 4589-2(ASTM D2863)
Flammability temperature index ²	330 °C	330 °C	ISO 4589-3
Smoke density – Flaming mode (2.56mm) Ds max	96	96	ASTM E-662
Smoke density – Non Flaming Mode (2.56mm) Ds max	407	407	ASTM E-662
Toxicity	0.8	0.8	Def Stan 02-713
Halogen content	0	0	IEC 60754-1
Acid Gas Emission			IEC 60754-2
pH	4.34	4.34	
Conductivity (max)	2.1 µS/mm	2.1 µS/mm	
Electrical Properties	Typical Value(Imperial)	Typical Value (SI)	Test Method
Volume resistivity (23 °C-50%HR)	3.2x 10 ¹⁵ Ω cm	3.2x 10 ¹⁵ Ω cm	IEC 60093 (ASTM D257)
Surface resistivity (23 °C-50%HR)	3.0x 10 ¹⁵ Ω	3.0x 10 ¹⁵ Ω	IEC 60093 (ASTM D257)
Other properties	Typical Value(Imperial)	Typical Value (SI)	Test Method
Hardness Shore D 15 Second	48	48	ISO R 868 (ASTM D2240)
Water absorption, 7d at 70 °C, crosslinked	0.020 mlb/in ²	1.4 mg/cm ²	BS 6469-99-1
Tensile Strength Retention	95%	95%	
Elongation at Break Retention	89%	89%	
Water absorption, 7d at 70 °C, thermoplastic	0.020 mlb/in ²	1.4 mg/cm ²	BS 6469-99-1
Tensile Strength Retention	102%	102%	
Elongation at Break Retention	55%	55%	
Oil IRM 902 oil, 7d at 100 °C, thermoplastic			IEC 60811-404
Tensile Strength Retention	90%	90%	
Elongation at Break Retention	80%	80%	

¹ measured on type IV specimen

² measured on large non self supporting specimen

ECCOH™5806

Recommended processing parameters

Extrusion	Cylinder Temperatures					Adapter	Head	Die
	Zone 1	Zone 2	Zone 3	Zone 4	Zone 5			
Temperature (Imperial)	266°F	284°F	311°F	320°F	329°F	329°F	329°F	338°F
Temperature (SI)	130°C	140°C	155°C	160°C	165°C	165°C	165°C	170°C

We recommend you not to exceed melting temperature of 170°C (338°F)

ECCOH™ 5806 is a formulation allowing PVC/PE extruders to be used.

For special extruder or application, please contact PolyOne for detailed processing information.

Pre-Drying

Our formulation is supplied in aluminium foil lined bags or octa-boxes and, providing the packaging has not been disturbed, the formulation does not require pre-drying. If the material has been stored in a moist environment over a long period then Pre-drying at approximately 70°C(158°F) for 4 hours is recommended in dehumidifying dryers.

Colorability

ECCOH™ 5806 is a colourable formulation. A full range of polymer specific colour masterbatches are available for ECCOH™ solutions within PolyOne.

Shelf life

ECCOH™ solutions are supplied in aluminium foil lined bags or octa-boxes and, based upon experience, this ensures a minimum shelf life of one year - providing the bag has not been opened and the material has been kept in a cool (0°C < Temp. < 25°C) dry environment.

PolyOne advises customers to conduct a full homologation program on their final cable construction to confirm acceptability.

CONTACT INFORMATION

Americas

U.S. – Avon Lake, Ohio
+1 440 930 1000

Brasil – Campinas
+55 19 3206 0561

ASIA

China – Shanghai
+86 (0) 21 5080 1188

India – Mumbai
+91 22 2564 0750
+91 9820 194 220

Europe

Belgium – Assesse
+32 (0) 830 660 211