

CABELEC[®] Conductive Compounds

Product Selection Guide





Cabot's Performance Materials: Over 130 Years of Getting You Where You Want to Go

Cabot Corporation is a global performance materials company, and we strive to be our customers' partner of choice. We have been a leading manufacturer of carbon black and other specialty chemicals for more than 130 years, and we have supplied masterbatches and compounds to the plastics industry for more than 50 years.

Our global reach enables us to partner closely with customers to meet the highest standards for performance, quality and service. Cabot has production facilities in each region of the globe along with three applications development centers that are closely linked to provide customers with global service as well as the latest innovations from Cabot.

Global Production and Applications Development Centers

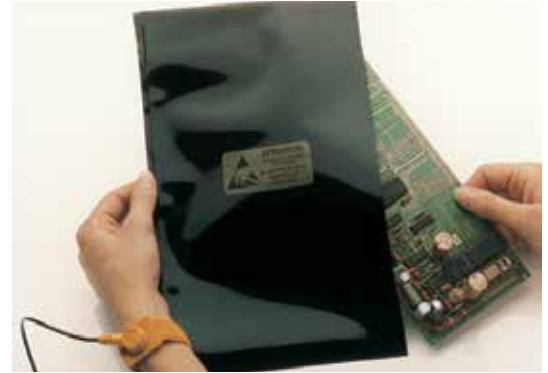


Cabot's CABELEC® Conductive Compounds

Cabot offers CABELEC® conductive compounds that provide our customers the ultimate performance in electrostatic dissipative (ESD) and other conductive plastics applications. Applications include electronics processing and packaging, industrial safety, packaging, automotive, aerospace, and many others. CABELEC compounds have been formulated to meet application-specific needs and are manufactured to exacting standards. Equally important, Cabot's technical sales and service teams are available to work with you and provide additional product information and support to aid your selection of the best product for your specific application. Regardless of your application, Cabot conductive compounds provide differentiated performance and reliable quality to protect your products.

Cabot's CABELEC® Brand

Cabot supplies a diverse product range of conductive compounds to meet performance and processability requirements across many industries and end uses. These products are sold under Cabot's long-established CABELEC conductive compound brand that is synonymous with quality, reliability, and high performance. While our CABELEC products have performed successfully in conductive plastic applications for decades and continue to be top choices for customers, we are always innovating to perfect our formulations and develop new products to meet the plastics industry's evolving requirements.



CABELEC® Products

Conductive Compound Products			
INDUSTRY / APPLICATION	KEY PERFORMANCE REQUIREMENTS	AVAILABLE CABELEC® PRODUCTS	BASE POLYMER
ELECTRONICS PACKAGING			
Crates	Conductivity Mechanical Performance Dispersability Chemical Cleanliness	CA3842 CA3839 CA4743	PP PP HDPE
Film		CA4918 CA3817	LDPE LLDPE
Sheet		CA4701 CA3896 CA4857	PP PS PS
Foam		CA4676	PE
INDUSTRIAL APPLICATIONS			
Pipes & Tubing	Conductivity Mechanical Performance Dispersability Chemical Cleanliness	CA4701	PP
Film		CA4918 CA3817	LDPE LLDPE
Sheet		CA4701	PP
Containers		CA6132	HDPE
Pallets		CA4743	HDPE
Industrial & Consumer Conductive Moldings		CA3178 CA3899 CA6141	PA6 POM PC
AUTOMOTIVE			
Fuel systems	Conductivity Mechanical Performance Fuel Resistance	CA6114 CA6115 CA3899 CA3178 CA6132	HDPE HDPE POM PA6 HDPE

Product Performance and Applications

CABELEC® conductive compounds are manufactured to exacting specifications to ensure reliable performance. They offer numerous advantages over competitive conductive materials such as metals. CABELEC products are:

- Lightweight
- Recyclable
- Easy-to-handle & process
- Corrosion-resistant

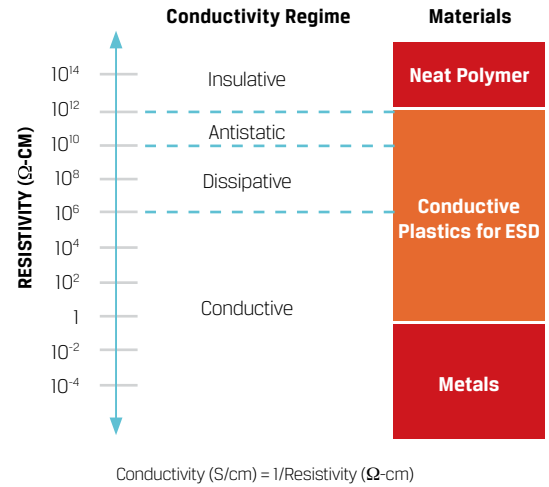
The primary application for plastics is the dissipation of static charge to protect against electrical damage, and the application range spans the ESD conductivity regime shown in Figure 1. The end uses include:

- Electrical & Electronics
- Industrial
- Automotive

Processability

CABELEC conductive compounds can be processed directly on conventional plastics processing equipment without the need for dilution.

Figure 1:
Conductivity Regime



Technical Data

CABELEC® Product	Base Polymer	Density	Hardness	Heat Distortion Temperature	Vicat Softening Point	Melt Flow Index		Volume Resistivity	Surface Resistivity	Flexural Modulus	Tensile Strength at Break	Tensile Strength at Yield	Elongation at Break	Notched Izod Impact (80mm x 10mm x 4mm)	Suggested Processing Methods and Applications
		kg/m ³ CTM E023	Shore D CTM E030 (ASTM D2240)	(1.80MPa)/°C CTM E038 (ISO 75)	(10N)°C CTM E039 (ISO 306)	g/10 min CTM E005 (ISO 1133)	Ohm.cm CTM E043	Ohm/sq CTM E042	MPa CTM E040A (ISO 178)	Mpa CTM E041 (ISO 527)	MPa CTM E041 (ISO 527)	% CTM E041 (ISO 527)	kJ/m ² CTM E044A (ISO 180)		
CA4743	HDPE	1153	59	43	99	37 (190°C/10 kg) 12 (190°C/5 kg) 3 (190°C/2.16 kg)	70	800	1300	10	18	60	15	Injection moulding, high fluidity large parts (e.g., pallets)	
CA6114	HDPE	1064	62	37	117	15 (190°C/21.6 kg) 4 (190°C/10 kg) 1 (190°C/5 kg)	15	103	724	15	24	54	23	Injection moulding Automotive fuel systems, technical parts	
CA6115	HDPE-gf ⁽¹⁾	1218	66	92	120	11 (190°C/21.6 kg) 2 (190°C/10 kg)	24	149	2793	36	39	4	13	Injection moulding Automotive fuel systems, technical parts	
CA6132	HDPE	1048	64	41	126	3.6 (190°C/21.6 kg) 0.6 (190°C/10 kg)	63 (c)	208 (c)	838	27 (c)	21 (c)	918 (c)	65	Blow moulding	
CA4676	LDPE	990	50	-	-	29 (190°C/21.6 kg) 5 (190°C/10 kg) 0.9 (190°C/5 kg)	10 (c)	2.5 x 10 ^{e4} (f)	-	13 (c)	11 (c)	385 (c)	-	Foam extrusion Electronics and safety packaging	
CA4918	LDPE	1060	-	-	-	3.5 (190°C/10 kg) 0.8 (190°C/5 kg)	-	5* 10 ³ (f)	-	LD 21 (f) TD 20 (f)	LD 12 (f) TD 11 (f)	LD 580 (f) TD 425 (f)	-	Blown film extrusion	
CA3817	LLDPE	1038	-	-	-	6 (190°C/10 kg) 2 (190°C/5 kg)	-	10 ⁴ (f)	284(c)	LD 25 (f) TD 22 (f)	LD 12 (f) TD 12 (f)	LD 1077 (f) TD 944 (f)	-	Blown film extrusion, high tear resistance	
CA3839	PPC	1038	63	47	150	94 (230°C/10 kg) 20.5 (230°C/5 kg) 4 (230°C/2.16 kg)	10 ⁴	10 ⁶	1200	15	21	59	45	Injection moulding, static dissipative: crates and technical parts	
CA3842	PPC	1090	66	46	148	22 (230°C/10 kg) 5 (230°C/5 kg) 0.4 (230°C/2.16 kg)	20	200	1500	16	21	20	31	Injection moulding: crates and technical parts	
CA4701	PPC	1028	68	50	155	10 (230°C/10 kg) 2.3 (230°C/5 kg)	70	979 770 (t)	1108	28	20	37	72	Extrusion: plain & corrugated sheets, monofilaments	
CA6141	PC	1200	80	121	149	12 (260°C/10 kg) 4 (260°C/5 kg) 0.6 (260°C/2.16 kg)	200	10 ⁵	2168	47	54	24	22	Injection moulding: technical parts	
CA3896	PS	1087	75	72	101	38 (200°C/21.6 kg) 5 (200°C/10 kg) 1 (200°C/5 kg)	300	10 ⁵	1875	24	30	23	16	Extrusion and thermoforming	
CA4857	PS	1090	73	67	100	67 (200°C/21.6 kg) 6 (200°C/10 kg) 1 (200°C/5 kg)	100	5* 10 ³	2015	20	26	25	9	Extrusion and thermoforming	
CA3178	PA6	1196	78	66	215	10 (275°C/10 kg)	100	10 ³	2700	45	55	15	15	Injection moulding: technical parts, automotive fuel system	
CA3899	POM	1390	79	72	168	28 (190°C/10 kg) 9 (190°C/5 kg) 3 (190°C/2.16 kg)	39	500	1900	45	46	42	11	Injection moulding: automotive fuel system, technical parts	

⁽¹⁾ : glass fiber filled

LD = Longitudinal Direction
TD = Transversal Direction

Tests are performed according to Cabot Test Methods (CTM) based on International Standards
Typical values for CABELEC® compounds are measured on injection moulded samples, except:
(c) values measured on compression moulded samples
(f) values measured on blown film (100 µm)
(t) values measured on extruded tape (400 µm)

Additional References

This CABELEC® Conductive Compounds Product Selection Guide provides high-level information about Cabot's CABELEC conductive compound offerings. For application-specific products, please refer to respective Cabot literature or contact your Cabot representative.

Cabot: A Proud History and Global Reach

Cabot Corporation is a global performance materials company, and we strive to be our customers' partner of choice. We have been a leading manufacturer for more than 130 years. Our global reach enables us to partner closely with our customers to meet the highest standards for performance, quality, and service.



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