PRINTEX® kappa 70
Specialty carbon black for conductive polymer compounds

Technical Information 1484

orion ENGINEERED CARBONS

Focused. Innovative. Responsive.

Who we are – Orion Engineered Carbons

Orion Engineered Carbons (OEC) is one of the world´s leading suppliers of carbon black. We produce a broad range of carbon black that includes high-performance specialty gas black, lamp black, thermal black and other carbon black that offer an excellent balance of colorimetric properties, dispersibility, UV-protection, infrared absorption, electrical conductivity and adjustment of mechanical and rheological properties. They are used in pressure pipe, wire and cable, and conductive products applications.
With 1,427 employees worldwide, Orion Engineered Carbons runs 14 global production sites and 4 applied technology centers, focusing on quality supply and collaborative partnerships with customers. Common shares of Orion Engineered Carbons are traded on the New York Stock Exchange under the symbol OEC.

PRINTEX® kappa 70 for conductive plastics applications

PRINTEX® kappa 70 provides superior conductivity already at lower concentration than most of previously listed carbon black in the field of conductive blacks. This improved percolation threshold is now closing the gap between Orion´s highly conductive black XPB 538 and other regular conductive black such as HIBLACK® 40B2. At the same time the influence on rheology and mechanical properties of final parts was maintained on an excellently well-balanced level. During the phase of PRINTEX® kappa 70 product development specific attention was turned on good processability since necessary pigment loading at desired high output rates often delimits efficient yield production. All in all we release a high conductive carbon black with outstanding conductive overall performance.

Applications aimed for PRINTEX® kappa 70

PRINTEX® kappa 70 is qualified as an universal conductive pigment performing excellent in almost all regular electrically conductive plastic compounds and conductive applications. PRINTEX® kappa 70 can be used in most significant polymer types such as polyolefin, co-polymers, polyvinyl chloride, high-impact polystyrene, polyamide and others. It is targeted for injection molded parts such as fuel canisters, boxes, housings for electrical goods, carrier trays of electronic devices, and is working just as well in extruded electrically conductive pipes, profiles, blown- and cast-films. Further target industries are areas with explosive risks, e.g. conductive hoses for the mining industry or ATEX environment (explosion protection), carpet backs and antistatic flooring and many articles for the automotive industry.

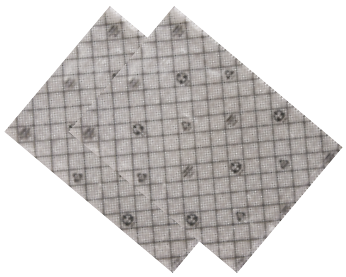
Typical field examples for end use:

Transport boards for electronically sensitive devices

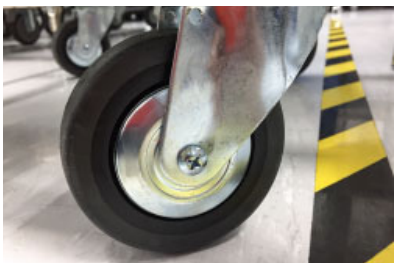
Spark discharge flammability, e.g. gas pump nozzle

Explosion-proof areas, e.g. ATEX

LEDs in conductive carrier tray



Antistatic packaging films



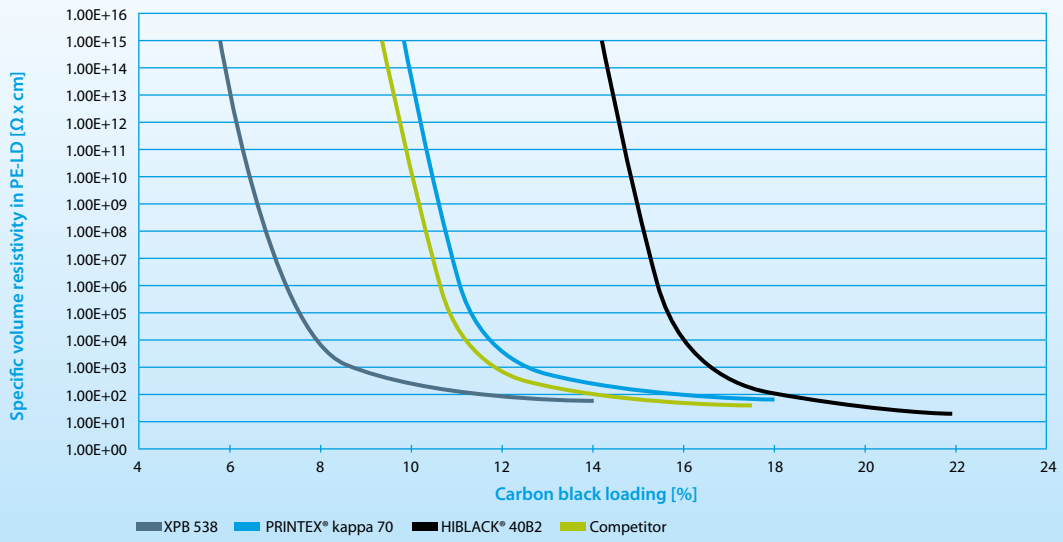
Electrical grounding and antistatic flooring

Technical data of PRINTEX® kappa 70 and some other Orion conductive black

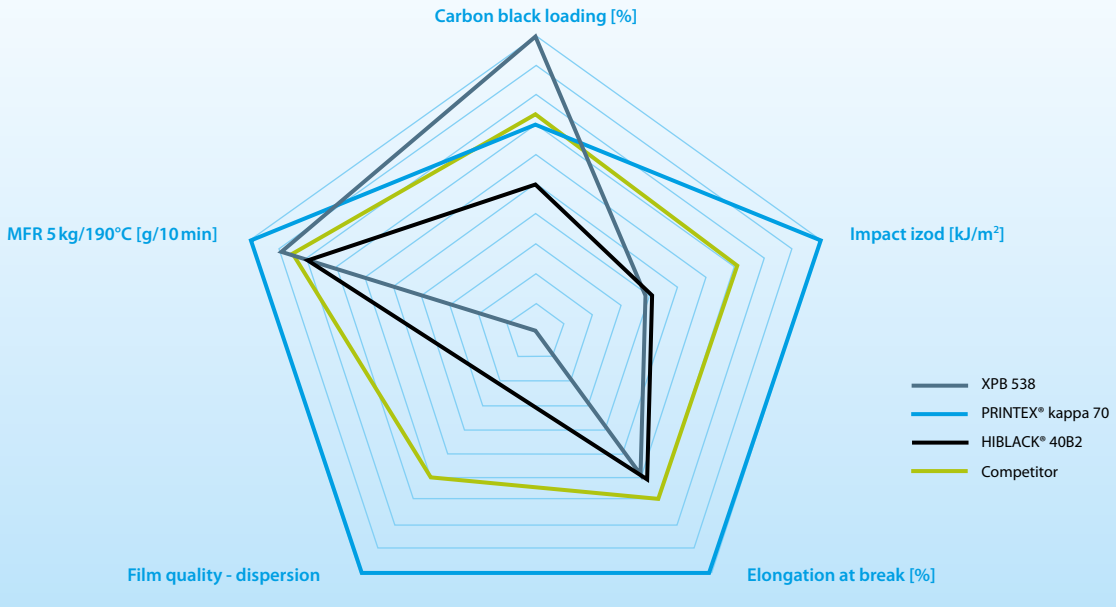
Parameter	Method	Unit	PRINTEX® kappa 70	XPB 538 BDS	HIBLACK® 40B2
OAN Oil absorption number	ASTM D 2414	ml/100g	170	280	150
BET	ASTM D 6556	m^2/g	230	1150	112
STSA	ASTM D 6556	m^2/g	130	540	95
pH	ASTM D 1512		7.5	8.5	8.0
Sieve residue 325mesh	ASTM D 1514	ppm	< 25	< 50	< 50
Sulfur content	ASTM D 1506	%	< 1.0	< 0.25	< 0.50

Handling and processing properties of PRINTEX® kappa 70 have been significantly improved. Hence PRINTEX® kappa 70 leads to excellent pigment dispersion while electrical conductivity shows very good performance at lower loading levels.

PRINTEX® kappa 70 percolation threshold compared to further ORION conductive black



Product perfomance at an electrical volume resitivity of 10^4 Ω*cm



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