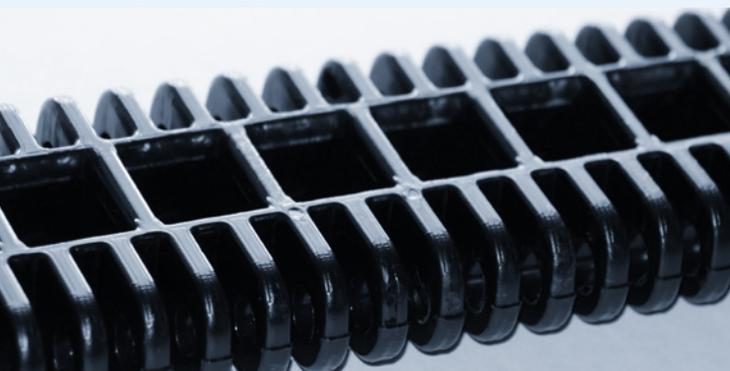


Examples of typical applications



Conveyor belt



Fuel pump bracket



Fuel filter housing

한국엔지니어링플라스틱(주) KOREA ENGINEERING PLASTICS CO.,LTD.

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Disclaimer:

Although the information and recommendations set forth herein are presented in good faith and believed to be correct, we recommend that persons receiving information must make their own determination as to its suitability to their purposes prior to use. The information is based on natural colored products only through relevant test methods and conditions. It is the obligation of the customer to determine whether a particular material and part design is suitable for a particular application. The customer is responsible for evaluating the performance of all parts containing plastics prior to their commercialization.

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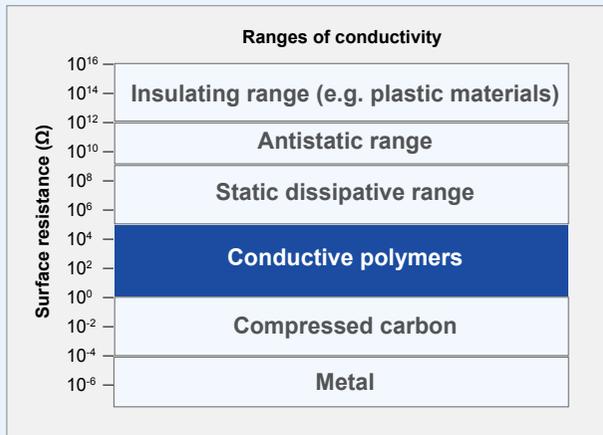
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KEPITAL ET-20A
Conductive POM

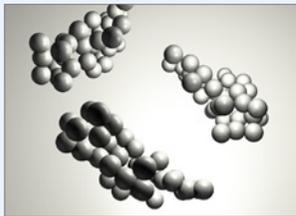
Conductive KEPITAL: For increased safety

Safety is an important factor, specifically in automotive engineering. Plastic materials adjusted to be conductive can efficiently prevent sparks generated by electrostatically charged components carrying fuel. Its properties such as high-level fuel resistance, excellent dimensional stability, sound mechanical properties and reliably set electrical conductivity make KEPITAL ET-20A one of the quality leaders among conductive polyacetals.



Conductivity: The soot is what it takes

Most plastic materials such as POM categorize as electrically insulating materials. The conductivity required for some applications can be obtained by adding special conductive carbon black which reduces the surface resistance from approx. $10^{16} \Omega$ to $10^3 \Omega$.



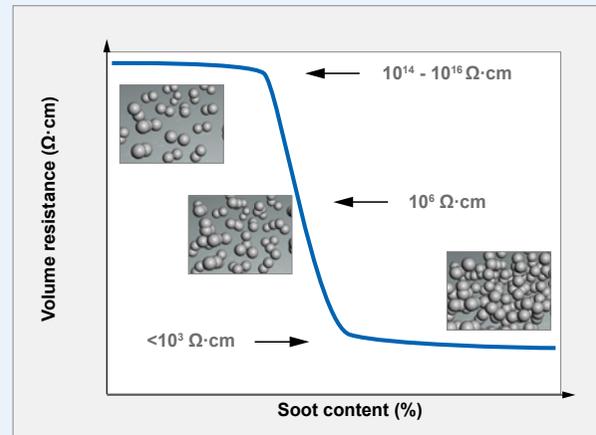
Staining soot, dose = 0.5 - 3 %
Spherical agglomerates



Conductive soot, dose > 7 %
Large & complex agglomerate structures

Conductive carbon blacks differs from carbon blacks used for coloration in both the amount that is added and the structure. Since only the soot agglomerates are actually conductive, they need to contact to turn the plastic into a conductive material.

Depending on the structure of the agglomerates and due to a phenomenon called percolation, the probability of uninterrupted contact in a significant area will escalate as the carbon black content increases.



Thus, the increase in conductivity is not proportional to the increase in carbon black content; instead, there is an abrupt change from insulating to conductive that appears as an "on/off point" as the percolation diagram illustrates.

KEPITAL ET-20A is a carbon-black-modified, POM copolymer grade

Reliably measured: Constant quality

There are various feasible laboratory and other methods of measuring surface or volume resistance. Depending on the test device, the area of contact, the measuring voltage and other factors, testing of the same sample may sometimes yield considerable discrepancies in the results.

Due to their small contact surface, pin electrodes are less suitable for measuring real-life surface resistances than crocodile clips, for example.

KOREA ENGINEERING PLASTICS CO., LTD. is very experienced in the field of conductive POM grades. In order to ensure highest performance in the finished part, every batch of our conductive grade ET-20A is checked for its conductivity.

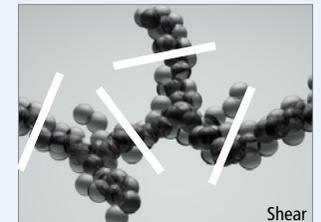
Property	Method	UoM	KEPITAL ET-20A
Melt flow rate	ISO 1133	g/10min	1
Density	ISO 1183	g/cm ³	1.39
Tensile strength	ISO 527	MPa	52
Nominal elongation at yield	ISO 527	%	8
Flexural strength	ISO 178	MPa	76
Flexural modulus	ISO 178	MPa	2450
Charpy notched impact strength	ISO 179	kJ/m ²	5.5
Heat deflection temperature (HDT/A, 1.8 MPa)	ISO 75	°C	92
Surface resistance	IEC 60093	Ω	10^3
Volume resistivity	IEC 60093	Ω · cm	10^4

Processing: Considered handling

Since carbon black is hygroscopic and therefore attracts moisture from the air, conductive POM grades should be dried before use (100 °C, 3 hours), particularly if the material has been kept in open containers or for longer periods of time.

The highly structured conductive carbon black agglomerates are susceptible to shear damage during the injection moulding process.

Thus, the conductive properties of the finished part may be directly impacted by parameters promoting shear, e.g. dosing and injection speeds or the sprue design.



Shear