

Nano4elec – BIO EC 12

Nano4elec is a family of conductive thermoplastic compounds. The electrical conductivity is achieved by adding different conductive carbon blacks. **BIO EC 12** is an electrically conductive thermoplastic compound based on biopolymer PLA. In addition to the conductive properties, **BIO EC 12** has very good mechanical properties and is easy to use in injection molding. **BIO EC 12** is based on a 100% bio-sourced polymer matrix.

Physical properties:

properties	Method	Value	unit
Density	intern	1,2	g/cm ³
MFI	210°C/2,16 kg	6	g/ 10 min
MFR	210°C/2,16 kg	5	cc/ 10 min
Crystalline Melt Temperature	DSC	140-160	°C
Glass Transition Temperature	DSC	55-65	°C
Processing temperature		190-220	°C
Young modulus	ISO 527-1	1800-2000	MPa
Tensile stress at break	ISO 527-1	25-30	MPa
Tensile elongation at break	ISO 527-1	5	%
Charpy unnotched impact strength	ISO 179-1 (23°C ; type 1 ; Edgewise)	20	kJ/m ²
Electrical conductivity	intern	12	Ω.cm
Thermal conductivity	Hot ring	0,26	W/mK
Thermal diffusivity	Hot ring	2,6	. 10 ⁻⁷ m ² /s

The information in this data sheet represents typical values obtained in our quality control laboratories and should not be regarded as a specification.

Processing:

It is suggested to process Bio EC 12 within the temperature range 190-220°C

Handling and storage:

The available data for handling and storage could be found in the Material Safety Data Sheet of this product.

Possible applications:

- **ANTISTATIC PACKAGING and TOOLS** for flammable products, ammunitions, explosives, electronic parts...

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- **HANDLING of ELECTRONIC COMPONENTS:** carrier boxes, conductive foams, carrier trays, carrier tapes...
- **FILMS:** antistatic and conductive films, packaging films, garbage bags...
- **POWER CABLES and ACCESSORIES:** insulator & conductor shield, strippable cables, jacketing...
- **AUTOMOTIVE INDUSTRY:** fuel injection systems, anticorrosion systems, fuel tank hoses...
- **TRANSPORT:** mobile phone parts, elevator parts, wheels...containers, bins, pallets...
- **COMPUTER, AUDIO & VIDEO:** antistatic articles for computer & accessories, CD player...
- **HEALTH:** medical applications, cleanroom equipment, articles for antistatic workplaces...
- **ANTISTATIC FLOORING**
- **CARPETS**
- **UNDERFLOOR HEATING**
- **HEATING ELEMENTS**
- **PTC (Positive Temperature Coefficient) SWITCHES**
- **TEXTILES...**

Note: The product can be considered four stars bio-based (to apply for certification):

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Information contained in this technical datasheet are reliable. They are presented for guidance only.
Users should take care in determining the suitability of such product for the intended use.