

Creating Material Change



HDPlas® IGSC02120 Technical Data Sheet



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Screen Printable Bio Sensor Graphene Ink

Product name: HDPlas® IGSC02120
 Synonyms: Bio Sensor Ink, Graphene Ink
 Chemical family: Functional graphene ink
 Properties: Electrically conductive, Flexible, Stable, Inert, Environmentally Friendly, No Metals, Robust, Ease of printing
 Typical uses: Bio sensors, printed electrodes, plastic electronics, sensors

Key features:

- Contains functionalised HDPlas® materials
- Designed for large volume screen printing
- Electrically conductive, boosted by specific functional groups
- Carbon, organic solvent-based ink (no metal)
- Curable at low temperatures
- Can be applied to a variety of surfaces
- Flexible on appropriate substrate
- Customisable
- Good shelf life

Solids content: 37-41%
 Viscosity: Typical 5 Pa·s, using a Malvern Rheometer at 25°C
 Thickness: Typical 13 micron wet emulsion; 7 micron dried, single pass; surface profilometer
 Sheet resistivity: 8.5 Ω/sq. normalised to 25 microns (µm), tested with a 4 point probe
 Coverage: 550 cm²/g, single pass; theoretical
 Adhesion: Typical 3B to 4B when printed on PET and TPU. Graded to ASTM D3359
 Pencil hardness: Typical 3H to 5H when printed on PET and TPU

Handling guidelines	
Printing equipment	Screen printer; semi-automatic, manual, fully-automatic and reel to reel
Mesh count	8.5 Ω/sq. normalised to 25 microns (µm), screen printed on stainless steel screen, mesh size 230, angle 45, thickness 30 microns, emulsion E04, tension 28N, raw mesh 77
Substrates	Substrates including but not limited to PET and TPU
Drying conditions	Can be dried at 120°C for 5 minutes; infrared drying can be used in conjunction with conventional heated dryers
Clean-up solvent	IMC00001 On Press Wash and Mesh opener. <i>*Warning, Do not use other screen cleaners as this may result in the ink gelling and the mesh blocking prematurely</i>
Storage	When not in use, the product should be kept sealed in its container and stored at controlled temperatures between 7-20°C <i>Warning - do not allow to freeze</i>
Shelf life	Ink in an unopened container has a recommended shelf life of 6 months from date of delivery. Stir well before use

All values reported here are results of experiments conducted in our laboratories and are intended to illustrate the products performance. They are not intended to represent the final product specifications.

Health and Safety

These inks are intended for research and industrial use by trained personnel. It is important for workers to avoid overexposure to chemicals contained in these products. Always consult the Material Safety Data Sheet (MSDS) and product labels before using the products. Keep product container closed when not in use to prevent solvent evaporation and spilling hazard.

The content supplied in this technical data sheet ("Information") supersedes all previous versions supplied. Version 1.2, November 2020

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Contact us: T: +44(0)1269 842946 E: info@haydale.com