

Conductive Biosensor Ink



IGSB02120 Technical Data Sheet



Creating Material Change
www.haydale.com  HaydaleGraphene
T: +44(0)1269 842946 E: info@haydale.com

Screen Printable Biosensor Graphene Ink

Product name:	IGSB02120
Synonyms:	Biosensor Ink, Graphene Ink
Chemical family:	Functional Graphene Ink
Properties:	Electrically Conductive, Flexible, Stable, Inert, Environmentally Friendly, No Metals, Robust, Ease of Printing
Typical uses:	Biosensors, Printed Electrodes, Plastic Electronics, Sensors

Key Features

- Optimised for glucose sensing
- 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

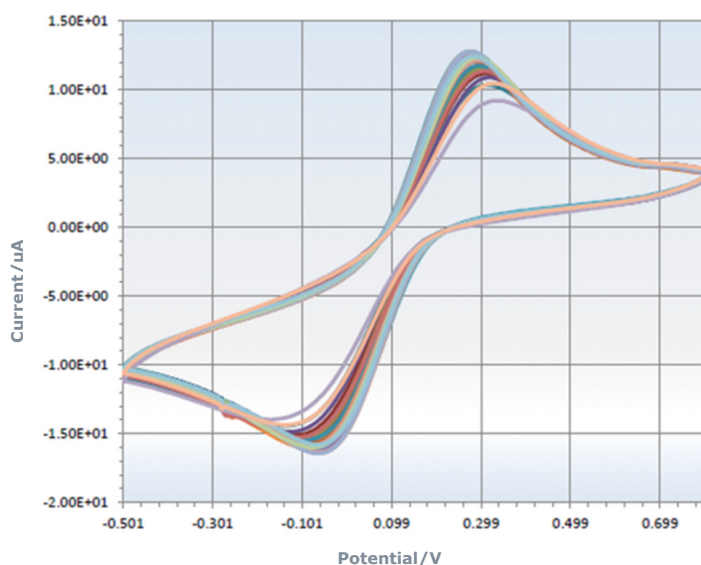
Handling Guidelines

- **Printing equipment:** screen printer; semi-automatic, manual, fully-automatic and reel to reel
- **Mesh count:** 10 - 16 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** 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** WSH001 on Press Wash and Mesh opener. **Warning**, do not use other screen cleaners as this may result in the ink gelling and the mesh blocking prematurely
- **Storage:** when not in use, the product should be kept sealed in its container and stored at controlled temperatures between 7-20°C. **Warning**, do not allow to freeze
- **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.

Test	Specification
Solids content:	41 - 45 %
Viscosity:	1.0 - 3.0 Pa·s using a Malvern Rheometer at 25°C, Shear rate 300s ⁻¹
Thickness:	Typical 13 micron wet emulsion; 7 micron dried, single pass; surface profilometer
Sheet resistivity:	10 - 16 Ω /sq. normalised to 25 microns (μm), tested with a 4 point probe
Coverage:	550 cm ² /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. Graded to ASTM D3363

Cyclic Voltammetry



IGSB02120 – Cyclic Voltammogram in 0.01M phosphate buffer saline 1 mM K₄Fe(CN)₆ –/– 1 mM K₃Fe(CN)₆–.

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.

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



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