

Creating Material Change



HDPlas[®] IGSC02008 Technical Data Sheet



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Screen Printable Graphene Ink

Product name: HDPlas® IGSC02008
Synonyms: Graphene ink, GNP ink
Chemical family: Functional graphene ink
Properties: Electrically conductive, flexible
Typical uses: Light flexible EL displays, plastic electronics, sensors, electrodes

Key features:

- Contain functionalised HDPlas® Graphene Nanoplatelets (GNPs)
- Designed for screen printing
- Electrically conductive
- Carbon, organic solvent based ink (no metal)
- Curable at low temperatures
- Can be applied to a variety of surfaces
- Flexible on appropriate substrate
- Customisable

Solids content: 41%
Viscosity: 2.9 Pa·s, rheometer - 40mm plate geometry
Thickness: 13 micron wet emulsion; 7 micron dried, single pass; surface profilometer
Sheet resistivity: 15 Ω/sq. normalised to 25 microns (µm), four point probe
Coverage: 550 cm²/g, single pass; theoretical

| Handling guidelines | |
|---------------------|---|
| Printing equipment | Screen printer; semi-automatic, manual, fully-automatic and reel to reel |
| Mesh count | Meshes of 61 threads/cm (156 TPI) and 64µm thread diameter can be used successfully; also 90 threads/cm (230 TPI) |
| Substrates | Substrates including but not limited to PET and TPU |
| Drying conditions | Can be dried at 60°C for 30 minutes or 100°C for 3 minutes; infrared drying can be used in conjunction with conventional heated dryers |
| Clean-up solvent | Commercially available screen wash solvent, for example, Sericol <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 |

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 2, June 2019

The Information should be used solely as guidance for the safe handling, storage, processing and/or use of the Product and is only typical of the methods described. The Haydale Group (Haydale Group means Haydale Limited, as a subsidiary of Haydale Graphene Industries plc., and any subsidiary or holding company from time to time and any subsidiary from time to time of any holding company of Haydale Limited) gives no express or implied warranty or guarantee or representation as to the behaviour of the Product described herein during any handling or storage or processing or use of the Product. To the extent permissible by law the Haydale Group shall under no circumstances whatever be liable whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any damage, including loss of profit, or any indirect or consequential loss arising under or in connection with any handling or storage or processing or use of the Product.



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