

DZP Technologies Ltd
Future Business Centre
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Last edited August 2018

SAFETY DATA SHEET

Graphene conductive ink G0250

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| 1 | Identification of substance |
| Trade name | Graphene conductive ink G0250 |
| Description | Aqueous dispersion of graphene few-layer particles in proprietary polymer binder |
| Identified uses | Research and development |
| Supplier | DZP Technologies Limited, Future Business Centre, Kings Hedges Rd, Cambridge CB4 2HY, UK |
| Contact for technical inquiries | Phone: +44(0)1223 781191, info@dzptechnologies.com |
| 2 | Hazard identification |
| | Relevant routes to exposure: Skin, inhalation, eyes |
| | Inhalation: Excessive inhalation may cause headache, dizziness, nausea. |
| | Skin contact: Causes irritation to the skin. |
| | Eye contact: Causes irritating to the eyes. |
| | Indigestion: May cause gastrointestinal irritation, nausea, vomiting, diarrhea. |
| Label elements | Void. |
| 3 | Composition and information on ingredients |
| Description | Mixture of non-hazardous substances. |
| Ingredients | Carbon, < 16 % (weight) CAS number 7782-42-5 |

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| 4 | First aid measures |
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| Inhalation | Remove the affected individual from exposure and supply fresh air. Apply artificial respiration and other support as required. Consult doctor if irritation of respiratory passages occurs. |
| Skin contact | Wash thoroughly with soap and water. Consult doctor if irritation continues. Remove contaminated clothing and wash before re-use. |
| Eye contact | Rinse with running water for 20 minutes. Consult doctor if irritation continues. |
| Indigestion | Rinse mouth thoroughly. Consult doctor if irritation continues. |
| Most important symptoms and effects, both acute and delayed | No further relevant information available. |

| 5 | Fire fighting measures |
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| Flash point | No data available. |
| Autoignition temperature | No data available. |
| Flammable limits | No data available. |
| Special firefighting procedures | Wear full protective clothing. Wear self-contained breathing apparatus. |
| Extinguishing media | Water spray, foam, dry powder or carbon dioxide |
| Unusual fire or explosion hazards | Not a fire hazard. |
| Hazardous combustion products | During fire, this compound forms toxic gases (CO, CO ₂). |

| 6 | Accidental release measures |
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| Spill procedures | Mop up small spillages with washing up liquid. |
| Environmental protection | Avoid discharge in sewer or waterways. |
| Person related safety precautions | Wear protective equipment. |

| 7 | Handling and storage |
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| Safe handling | Avoid contact with eyes, skin and clothing. Wash hands thoroughly after handling. Do not inhale or ingest. Loosen closure cautiously before opening. |
| Storage requirements | <u>Do not freeze.</u> Keep containers sealed. Store in cool, dry and well-ventilated place. Protect from direct sunlight. |

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| 8 | Exposure controls and personal protection |
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The usual precautionary measures should be adhered to in handling chemicals. Wear protective glasses and protective work clothes. Keep away from food and drinks. Wash hands during breaks.

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| 9 | Physical and chemical properties |
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| Form | Black coloured liquid |
| Odour | Residual odour from polymer binders may be present. |
| pH value | Not determined. |
| Danger of explosion | The product is not explosive. |
| Self-ignition | The product is not self-igniting. |
| Melting, boiling and flash points | Not determined. |
| Ignition temperature | Not determined. |
| Vapour pressure | Not determined. |
| Viscosity | Brookfield 1,000 - 2,500 mPa.s (cP) at 20 r.p.m. at 25 °C. |
| Solvent | Water |
| Solids content | 28 - 30 % (weight) |

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| 10 | Stability and reactivity |
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| Stability | Stable at normal temperatures and pressures. |
| Hazardous reactions | Not applicable. |
| Materials to be avoided | Not applicable. |
| Decomposition | Carbon oxides are formed during fire. |
| Conditions to avoid | Avoid excessive heat, flames and other ignition sources. |

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| 11 | Toxicological information |
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No data available.

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| 12 | Ecological information |
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No data available.

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| 13 | Disposal considerations |
| | The product must be disposed of according to local and national regulations. |
| 14 | Transport information |
| General | This product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID). |
| Transport/Additional information | Not dangerous. |
| 15 | Regulatory information |
| General | Observe the normal safety regulations when handling chemicals. For use only by technically qualified individuals. |
| Water hazard | Not applicable. |
| 16 | Other information |
| | The information herein is presented in good faith and believed to be accurate as of the date shown above. However, no warranty, express or implied, is given. It is the client's responsibility to ensure that its activities comply with the relevant laws. |