Solvent-Based Graphene Dispersion

SKUs: GI-DSV-32OZ, GI-DSV-1GAL, GI-DSV-5GAL

Safety Data Sheet

Prepared in OSHA Hazard Communication Standard (29 CFR 1910.1200, HazCom 2012) / GHS 16-section format. Revision date 2026-11-19. No measured value has been invented: finished-product values are “Reported on lot Certificate of Analysis” or “Not determined”; values labeled “typical, base fluid” are published carrier data.

1. IDENTIFICATION

Product identifier	Solvent-Based Graphene Dispersion
Product codes (SKUs)	GI-DSV-32OZ, GI-DSV-1GAL, GI-DSV-5GAL
Product form	Liquid dispersion: graphene in N-methyl-2-pyrrolidone (NMP)
Recommended use	Graphene dispersion for incorporation into the customer's formulation at the trial rate GI recommends.
Restrictions on use	Industrial/professional use only. Not for food, drug or cosmetic use. Not for direct consumer use.
Supplier / manufacturer	Graphene Integrations, LLC, 8101 Beatty Rd, Sherrills Ford, NC 28673, USA
Email	sales@grapheneintegrations.com
Website	grapheneintegrations.com
Phone	+1 (704) 659-3682
Emergency phone number	+1 (704) 659-3682 (24-hour emergency number)

2. HAZARD(S) IDENTIFICATION

GHS / OSHA HazCom 2012 classification	Flammable liquid Category 4 (combustible liquid); Skin Irritation 2; Eye Irritation 2A; STOT Single Exposure 3 (respiratory irritation); Reproductive Toxicity Category 1B. Based on NMP at > 0.3% (reproductive cut-off); source: carrier supplier SDSs for N-methyl-2-pyrrolidone (NMP).
Signal word	Danger
Hazard statements	H227 Combustible liquid. H315 Causes skin irritation. H319 Causes serious eye irritation. H335 May cause respiratory irritation. H360D May damage the unborn child.
Pictograms	GHS08 (health hazard); GHS07 (exclamation mark)

Precautionary statements	P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking. P261 Avoid breathing vapors. P271 Use only outdoors or in a well-ventilated area. P280 Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 IF ON SKIN: wash with plenty of water. P304+P340 IF INHALED: remove person to fresh air. P305+P351+P338 IF IN EYES: rinse cautiously with water for several minutes; remove contact lenses if easy; continue rinsing. P308+P313 IF exposed or concerned: get medical advice. P403+P233 Store in a well-ventilated place; keep container tightly closed. P405 Store locked up. P501 Dispose of contents/container per regulations.
Hazards not otherwise classified	NMP is readily absorbed through skin. Stains black.
Ingredient(s) of unknown acute toxicity	Graphene is of unknown acute toxicity.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Mixture: graphene pre-dispersed in the liquid carrier below. Never supplied as a dry powder. Contains no carbon black.

Component	CAS number	Concentration (% by weight)
Graphene	1034343-98-0	Reported on lot Certificate of Analysis
N-Methyl-2-pyrrolidone	872-50-4	Balance
Dispersant (proprietary)	Not disclosed (trade secret)	About 5

4. FIRST-AID MEASURES

Eye contact	Rinse immediately with plenty of water for at least 15 minutes, also under the eyelids. Get medical attention.
Skin contact	Remove contaminated clothing immediately. Wash with plenty of water. Get medical attention if irritation persists.
Inhalation	Move to fresh air. If breathing is difficult, get medical attention.
Ingestion	Rinse mouth. Do not induce vomiting. Get medical attention.
Most important symptoms and effects	Eye, skin and respiratory tract irritation; headache. May damage the unborn child.
Immediate medical attention / special treatment	Treat symptomatically. Pregnant workers should be advised of the reproductive hazard.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	Water spray, alcohol-resistant foam, dry chemical, carbon dioxide.
Unsuitable extinguishing media	Do not use a solid water jet.
Specific hazards	Combustible liquid; vapors heavier than air; containers may rupture when heated. Combustion produces carbon oxides and nitrogen oxides (NOx).

Firefighter protection	Self-contained breathing apparatus and full protective gear; cool containers with water spray.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Ventilate; remove ignition sources; wear chemical-resistant gloves, goggles and respirator as needed. Keep pregnant persons away.
Environmental precautions	Prevent entry into drains and waterways.
Containment and clean-up	Absorb with inert material (sand, diatomaceous earth); collect in closed labeled containers with non-sparking tools.

7. HANDLING AND STORAGE

Precautions for safe handling	Obtain special instructions before use. Avoid contact with skin and eyes and breathing vapors. Use local exhaust; keep away from ignition sources. Mix before use.
Conditions for safe storage	Keep tightly closed in a dry, cool, well-ventilated place; store locked up; NMP is hygroscopic. Away from strong oxidizers, acids and bases.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Occupational exposure limits	NMP: no OSHA PEL; source SDS lists EU/UK WEL 40 mg/m³ (8 h) and 80 mg/m³ (15 min) with skin notation. Graphene: none established.
Engineering controls	Local exhaust ventilation; closed systems where practical.
Eye / face protection	Chemical goggles; face shield for splashing.
Skin / hand protection	Butyl rubber gloves (NMP penetrates nitrile quickly); protective clothing.
Respiratory protection	NIOSH-approved organic vapor respirator if ventilation is inadequate.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Liquid
Appearance / color	Black (graphene in colorless solvent)
Odor	Amine-like (carrier)
pH	Not applicable (non-aqueous; based on NMP carrier)
Melting point	-24 °C (carrier, typical)
Boiling point	204 °C (carrier, typical)
Flash point	91 °C (carrier, typical); finished: Reported on lot Certificate of Analysis
Flammability limits	LEL 1.3% / UEL 9.5% (v/v) (carrier, typical)
Vapor pressure	0.32 hPa (carrier, typical)

Density	1.028 g/cm³ (carrier, typical); finished: Reported on lot Certificate of Analysis
Solubility in water	Miscible (carrier)
Viscosity	Reported on lot Certificate of Analysis
VOC content	Carrier is a VOC Reported on lot Certificate of Analysis
Graphene content	Reported on lot Certificate of Analysis

10. STABILITY AND REACTIVITY

Reactivity	Not reactive under normal conditions.
Chemical stability	Stable; hygroscopic.
Possibility of hazardous reactions	Vigorous reaction with strong oxidizers.
Conditions to avoid	Heat, flames, sparks, moisture.
Incompatible materials	Strong oxidizers, strong acids, strong bases, reducing agents.
Hazardous decomposition products	Carbon monoxide, carbon dioxide, nitrogen oxides.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure	Skin absorption, inhalation, eye contact.
Acute toxicity	Carrier: low acute toxicity per source SDS. Graphene: Graphene was assigned no harmonized GHS classification. Published reviews (Fadeel et al., ACS Nano 2018, Safety Assessment of Graphene-Based Materials: https://pubmed.ncbi.nlm.nih.gov/30387986/) report that the main concern is inhaling dry, airborne particles. This product contains graphene only as a dispersion in a liquid, not as a powder. Toxicity data for this graphene grade in this form are not available.
Skin / eye	Causes skin and serious eye irritation (carrier).
STOT single exposure	May cause respiratory irritation (carrier).
Reproductive toxicity	May damage the unborn child (Category 1B, carrier).
Carcinogenicity	Not listed by NTP, IARC or OSHA. Graphene not listed. No carbon black.
Aspiration hazard	Not classified.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Carrier: low aquatic toxicity per source SDS. Graphene: limited data (Fadeel et al., ACS Nano 2018, Safety Assessment of Graphene-Based Materials: https://pubmed.ncbi.nlm.nih.gov/30387986/).
Persistence	NMP readily biodegradable; graphene persistent.
Bioaccumulative potential	Low (carrier).
Mobility in soil	NMP mobile (water-miscible).

Other	None known.

13. DISPOSAL CONSIDERATIONS

Waste treatment / disposal methods	Dispose of as chemical waste via licensed handler; do not discharge to drains. RCRA status:.
Contaminated packaging	Empty completely, then recycle or dispose of per local regulations.

14. TRANSPORT INFORMATION

UN number / shipping	Non-bulk: not regulated by US DOT (combustible liquid, flash point 91 °C); bulk may be regulated as combustible liquid. IMDG/IATA: not regulated as dangerous goods
Marine pollutant	No
Special precautions	Keep closed and upright.

15. REGULATORY INFORMATION

TSCA	NMP (872-50-4): listed; subject to TSCA section 6 risk management rule for NMP. Graphene: Not identified on the public TSCA Chemical Substance Inventory. EPA has handled graphene and graphene nanoplatelets as new chemical substances (premanufacture notices with significant new use rules, e.g. 40 CFR 721.10844 and 721.11917). Some suppliers report graphene nanoplatelets under graphite (7782-42-5, TSCA active); that listing has not been applied to this product. Contact Graphene Integrations for the current TSCA status of the graphene in this product.
SARA 311/312	Flammable (combustible), skin/eye irritation, STOT, reproductive toxicity
SARA 313	N-Methyl-2-pyrrolidone is a listed toxic chemical (de minimis 1%).
California Proposition 65	WARNING: N-Methylpyrrolidone is known to the State of California to cause birth defects or other reproductive harm (developmental toxicity).

16. OTHER INFORMATION

Prepared by	Graphene Integrations, LLC, 8101 Beatty Rd, Sherrills Ford, NC 28673, USA • sales@grapheneintegrations.com
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Revision	Version 1.1 (revised 2026-11-19)

Notes	Graphene is supplied only pre-mixed in a liquid carrier, never as a dry powder. Finished-product values are reported on each lot's Certificate of Analysis. Carrier data source (cited, typical values): carrier supplier SDSs for N-methyl-2-pyrrolidone (NMP). Graphene notes: Fadeel et al., ACS Nano 2018, Safety Assessment of Graphene-Based Materials: https://pubmed.ncbi.nlm.nih.gov/30387986/.
Disclaimer	The information in this SDS is believed to be accurate as of the revision date. It does not constitute a warranty. Users should determine the suitability of this product for their own use.