

TECHNICAL DATA SHEET

Single Layer Graphene Oxide Dispersion

Single-layer GO dispersions in DI water and ethanol · Modified Hummers method · CAS 7782-42-5



ACS Material Single Layer Graphene Oxide Dispersion in Water (100 mL, 10 mg/mL bottle shown)

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ACS MATERIAL, LLC

959 E Walnut St., Suite 100
Pasadena, CA 91106, USA
Phone +1 (866) 227-0656
Fax +1 (781) 518-0284

contact@acsmaterial.com

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SECTION I

Product Overview

Single-layer graphene oxide (GO) is an exciting graphene-based nanomaterial with potential for use in a wide variety of industries and applications. GO's good dissolvability in water, as well as in organic solvents, makes solution processing easy, and dispersions of graphene oxide in water and ethanol facilitate environmentally safe handling for coatings, composites, and other advanced material applications. Single-layer graphene oxide from ACS Material has a pH of about 3–5 when dissolved into distilled water by sonication.

Single Layer Graphene Oxide Dispersion is very stable and can be stored for more than one year without using a surfactant. It is suitable for the preparation of reduced graphene and graphene film.

SECTION II

Preparation Method

All dispersions are made from our Single Layer Graphene Oxide (H Method), prepared by the modified Hummers method. The graphene oxide is synthesized in water first and freeze dried to make powder, which is then dispersed in water (or ethanol) at the required concentration. The sonication period during the dispersion procedures is about 30 minutes.

SECTION III

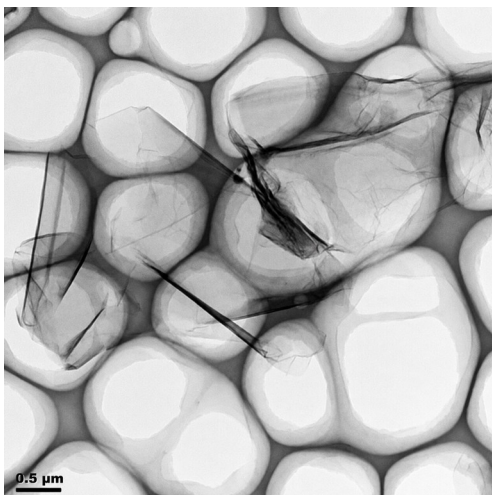
Specifications

New SKU	GNO1W001	GNODAW01 (New Product)	GNO1W005	GNOD1E01	GNOD1W01
Old SKU	GnO1LD2H2O-1g	—	GnO1LH2OSMALL-0.5g	—	—
Preparation Method	Modified Hummers Method	Modified Hummers Method	Modified Hummers Method	Modified Hummers Method	Modified Hummers Method
Concentration	10 mg/mL 100 mL per bottle (1 g)	5 mg/mL 1 L per bottle (5 g)	5 mg/mL 100 mL per bottle (0.5 g)	5 mg/mL 100 mL per bottle (0.5 g)	5 mg/mL 100 mL per bottle (0.5 g)
Solvent	DI Water	DI Water	DI Water	Ethanol	DI Water
Flake Size	0.5–2.0 μm	0.5–2.0 μm	~500 nm	0.5–2.0 μm	0.5–2.0 μm
Thickness	0.6–1.2 nm	0.6–1.2 nm	0.6–1.2 nm	0.6–1.2 nm	0.6–1.2 nm
Single-layer Ratio	>80%	>80%	>80%	>80%	>80%
Color	Brown/Black	Brown/Black	Brown/Black	Brown/Black	Brown/Black

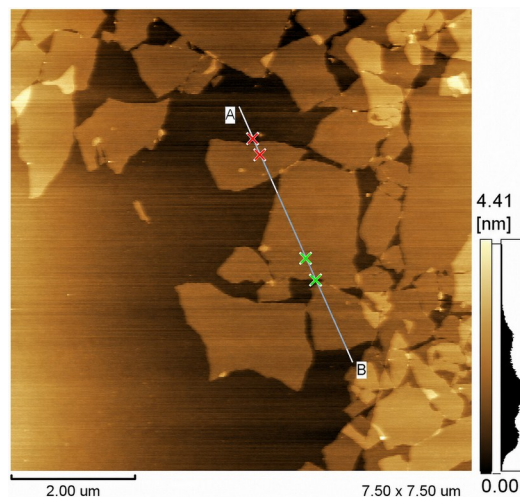
Note: For a custom order, the maximum concentration available for both water and ethanol dispersion is 10 mg/mL; customization fee and minimum order quantity may apply.

SECTION IV

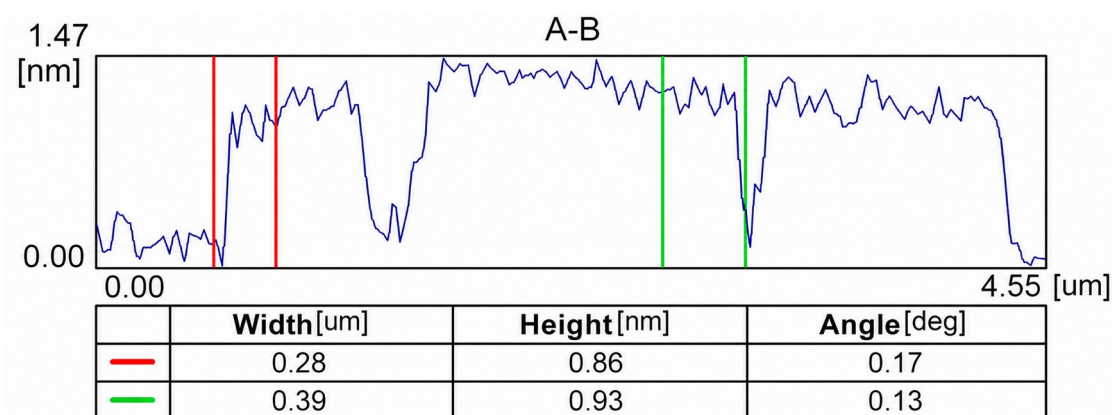
Characterization



Typical TEM image of ACS Material Graphene Oxide Dispersion



AFM topography image of graphene oxide sheets deposited from the dispersion



AFM height profile along line A-B, showing apparent sheet heights of approximately 0.86 and 0.93 nm

SECTION V

Applications

Typical application fields for ACS Material Single Layer Graphene Oxide Dispersion include:

- Catalyst
- Supercapacitors
- Solar energy
- Graphene semiconductor chips
- Conductive graphene film
- Graphene computer memory
- Biomaterials
- Transparent conductive coatings

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