TECHNICAL DATA SHEET

Single Layer Graphene Oxide Flake (H Method)

Single-layer graphene oxide supplied as thin flake/film · Modified Hummers method



ACS Material Single Layer Graphene Oxide Flake (H Method), 1 g bottle shown

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SECTION I

Product Overview

Graphene oxide will be supplied as thin flake/film, and it has good solubility in water, ethanol, DMF et al. The dispersion concentration of graphene oxide in water will be larger than 2 mg/mL. Graphene oxide can be easily dispersed in polar solvents with the help of ultrasound.

ACS Material also provides Graphene Oxide Dispersion made by this product.

SECTION II

Preparation Method

Modified HUMMER's Method.

SECTION III

Specifications

Single Layer Graphene Oxide Flake (H Method)	
Diameter	0.5~5 μm
Thickness	0.8~1.2 nm
Single Layer Ratio	~80%
Purity	~99%
Tapped Density	0.44 g/cm^3
Bulk Density	0.26 g/cm^3

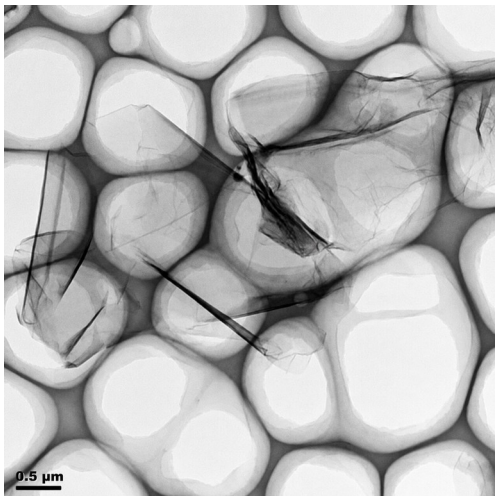
Elemental compositions of graphene oxide

Sample	N (wt%)	C (wt%)	O (wt%)	C/O at. ratio
Graphene Oxide	0	51.26	40.78	1.67

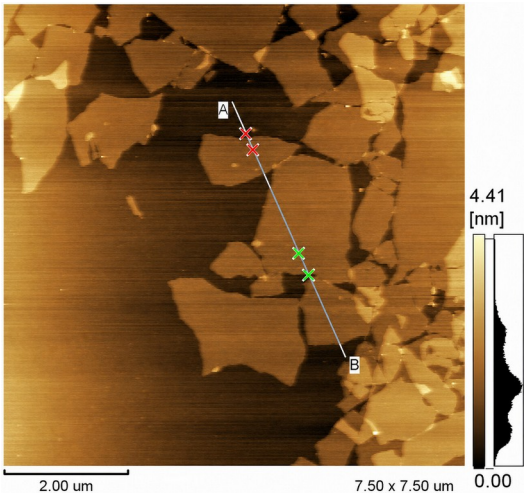
Note: *Graphene oxide is produced by the classic modified Hummers method, which yields an oxidization level of ≥95%. There is some variance inherent in the manufacturing process; please use the numbers in the table as reference values.*

SECTION IV

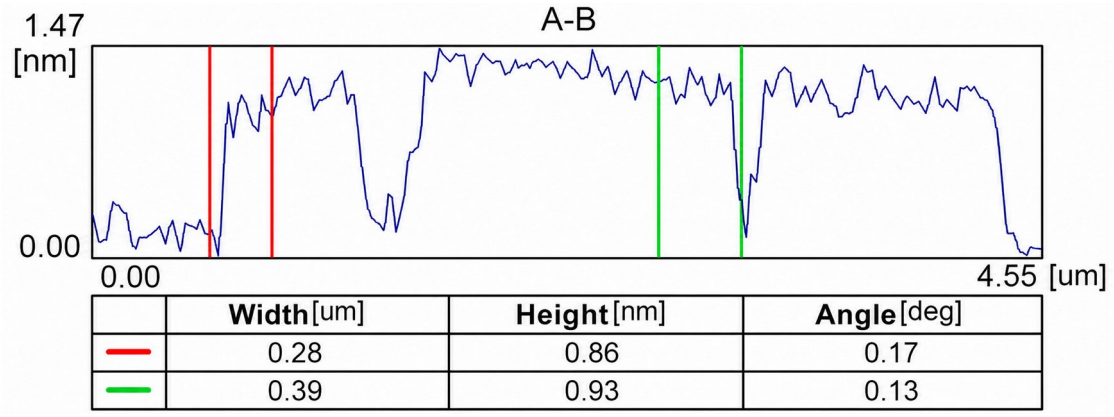
Characterization



TEM of ACS Material Single Layer Graphene Oxide Flake (H Method)



AFM topography image of ACS Material Single Layer Graphene Oxide



	Width [um]	Height [nm]	Angle [deg]
—	0.28	0.86	0.17
—	0.39	0.93	0.13

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

**The TEM and AFM analysis were completed through dispersing ACS Material Graphene Oxide into water or ethanol with the help of ultrasound.*

SECTION V

Applications

Typical application fields for ACS Material Single Layer Graphene Oxide Flake (H Method) include:

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

Attentions

*Research on oxidized graphite has reported increased flammability associated with potassium salt contamination. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

*Kim F, Luo J, Cruz-Silva R et al. Self-propagating domino-like reactions in oxidized graphite, Advanced Functional Materials, 2010, 20 (17): 2867–2873.

Revision Date: 11/23/2026

Revision summary (4, 11/23/2026): Cover image updated; CAS number removed from the cover subtitle; handling note corrected using the cited research and existing product SDS. Product specifications and characterization data are unchanged from the revision dated 07/25/2026.

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