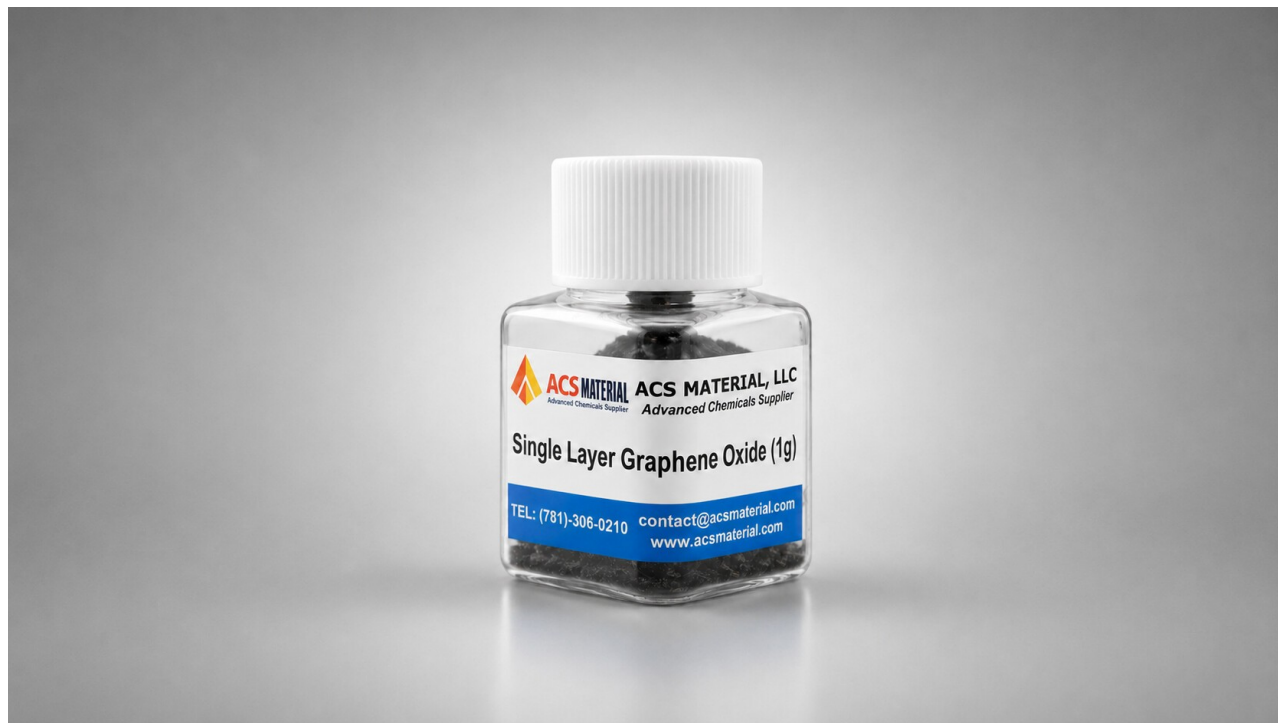


TECHNICAL DATA SHEET

Single Layer Graphene Oxide Flake (H Method)

Single-layer graphene oxide supplied as thin flake/film · Modified Hummers method · CAS 7782-42-5



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

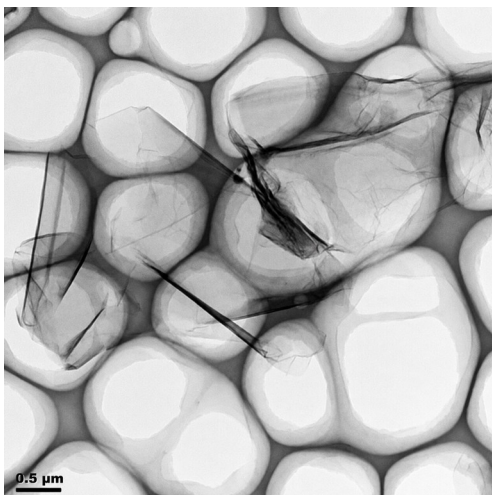
Elemental compositions of graphene oxide

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

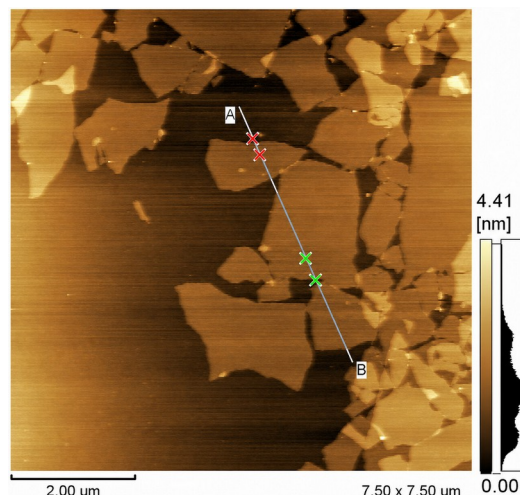
Note: Graphene oxide is produced by the classic modified Hummers method, which yields an oxidization level of $\geq 95\%$. There is some variance inherent in the manufacturing process; please use the numbers in the table as reference values.

SECTION IV

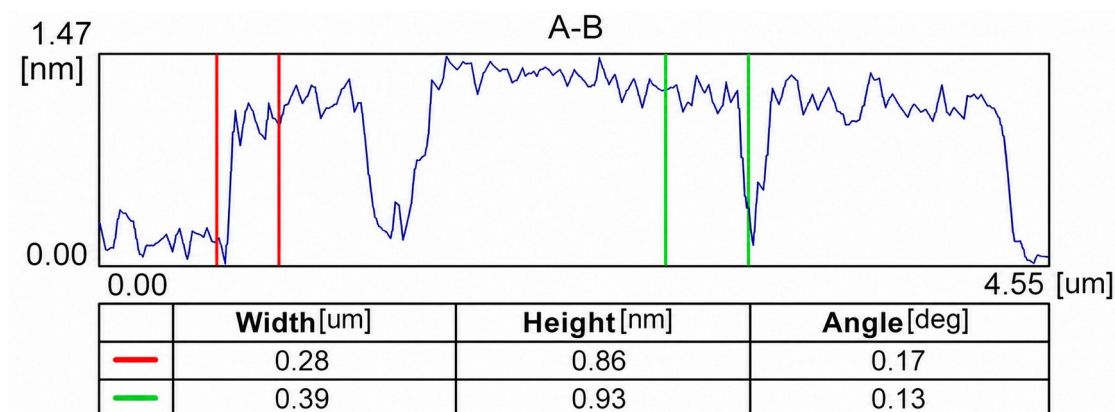
Characterization



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



AFM topography image of ACS Material Single Layer Graphene Oxide



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

*The research demonstrates that a common contaminant (some potassium salt residues) in graphite oxide renders the material highly flammable. The properties of graphene oxide are similar with graphite oxide. ACS Material graphene oxide has been purified for many times, and the potassium salt is removed completely. Therefore the consumers can use ACS Material graphene oxide without any hesitation.

*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: 07/25/2026

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