



Technical Data Sheet

ACS Material Single Layer Graphene Powder and Dispersion

Table of Contents

[1 – Preparation Method](#)

[2 – Characterizations](#)

[3 – Application Fields](#)

Contact Information:

Manufacturer: ACS Material, LLC.

Address: 959 E Walnut St., Suite 100, Pasadena, CA 91106

Phone: (866)-227-0656

Fax: (781)-518-0284

E-Mail: contact@acsmaterial.com

Revision: 100318

1. Preparation Method

Powder: Thermal exfoliation reduction + Hydrogen reduction

Dispersion: Mechanical stripping and dispersion Method

2. Characterizations

Table 1 ACS Material Single Layer Graphene Powder

Single Layer Graphene Powder	
Flake Diameter (μm)	0.4-5
Thickness (nm)	0.6-1.2
BET surface area (m^2/g):	400 ~1000
Electrical resistivity ($\Omega\cdot\text{cm}$):	≤ 0.30
Dispersible property:	Can be re-dispersed in most solvents with the help of sonication

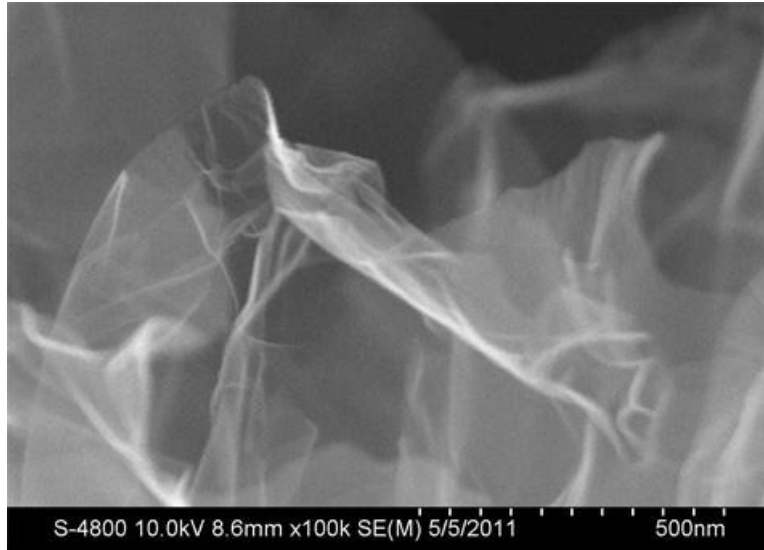
Table 2 ACS Material Single Layer Graphene Dispersion

Single Layer Graphene Dispersion	
Concentration (mg/ml)	1
Flake Diameter (μm)	0.4-5.0
Thickness (nm)	0.6-1.2
Water (wt%)	99.9
Dispersant (wt%)	0.1

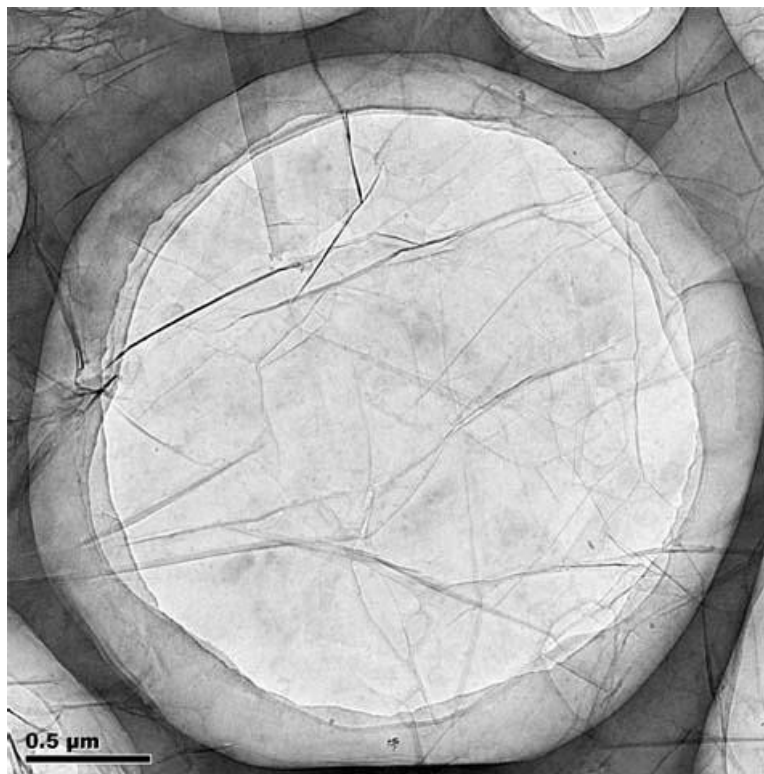
Notes: Please ultrasonicate the single layer graphene dispersion before use.

Dispersible Single Layer Graphene is prepared by completely reducing graphene oxide, which is prepared by the modified Hummer's method. The commonly used prepare method creates a denser graphene which is subject to aggregations. The resulting graphene agglomerates are not soluble or redispersable in water or other polar solvents, and this makes further processing difficult. Our Dispersible Graphene avoids this problem and can be redispersed in many solvents.

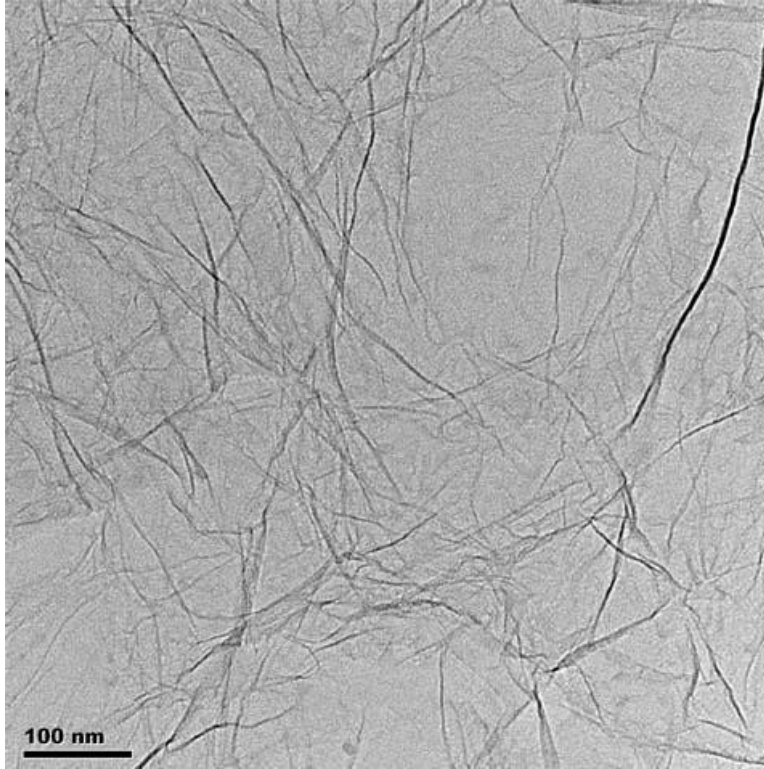
ACS Material can also provide [Fluorinated Graphene](#). [Read More>>](#)



Typical SEM Image of ACS Material Single Layer Graphene



Typical TEM Image of ACS Material Single Layer Graphene (1)



Typical TEM Image of ACS Material Single Layer Graphene (2)

3. Application Fields

This product is a monolayer graphene-based oily battery slurry with high electrical conductivity made by ultrasonic dispersible Single Layer Graphene. It is metal ion free and can be widely applied in battery slurry as conductive agent to improve the high rate charge-discharge capacity.

- 1) Lithium ion and nickel-hydrogen battery - as high conductive components in battery slurry
- 2) Supercapacitors - conductive reagents of the supercapacitor electrodes
- 3) Catalyst
- 4) Lead acid cell, Solar energy, Solar Cell
- 5) Graphene semiconductor chips and semiconductor industry
- 6) Conductive graphene film
- 7) Graphene computer memory
- 8) Biomaterials
- 9) Transparent conductive coatings

Disclaimer: ACS Material, LLC believes that the information in this Technical Data Sheet is accurate and represents the best and most current information available to us. ACS Material makes no representations or warranties either express or implied, regarding the suitability of the material for any purpose or the accuracy of the information contained within this document. Accordingly, ACS Material will not be responsible for damages resulting from use of or reliance upon this information.