# Few Layer Graphene Oxide

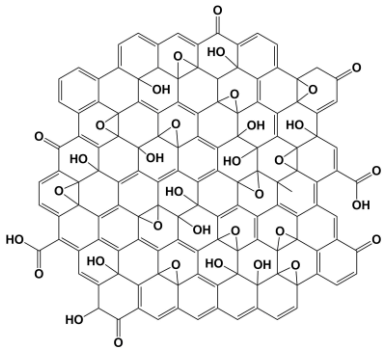
## CAS: 1034343-98-0

### Description

Graphene oxide is a dark brown flaked powder, easily dispersible in water and a variety of polar solvents. With a high surface area and rich oxygen-containing functional groups, it is ideal for applications in energy storage, sensors, nanocomposites, and catalysis. The abundant oxygen functionalities on the graphene oxide surface allow for versatile chemical modification and functionalization, enabling the tailoring of graphene oxide to meet specific requirements in advanced material applications such as coatings, films, and conductive inks.

**Advantages Over Other Carbon Materials**

- Few layer graphene oxide as dry powder or aqueous dispersion
- High dispersibility in water and polar solvents
- Rich oxygen functionalities that allow for further chemical functionalization, enhancing compatibility with various applications
- High surface area that supports enhanced reactivity, making it suitable for catalysis, energy storage, and sensing applications



### Product Specifications

| | Form | Concentration | Catalog No. |
|---|---|---|---|
| **Forms available** | Powder | - | DMM-GO-001 |
| | Aqueous dispersion | 1 mg/mL | DMM-GO-002 |
| | Aqueous dispersion | 2 mg/mL | DMM-GO-003 |
| | Aqueous dispersion | 4 mg/mL | DMM-GO-004 |
| Synthesis Method | Hummer's Method | | |
| Material Composition | Carbon (C): 48.4%, Hydrogen (H): 1.9%, Oxygen (O): 47.7%, Sulfur (S): 1.9% | | |
| C/O Ratio | 1.02 | | |
| Form | Brown flaked powder or brown translucid aqueous dispersion | | |
| Raman D/G Ratio | ~0.85 | | |
| $SO_4$ Content | 5.7% | | |
| Major Surface Functionalities | Epoxide, hydroxyl, carboxyl and carbonyl | | |
| Dispersibility | High in water and polar solvents | | |
| Shelf life[1] (dispersions) | 1 year | | |

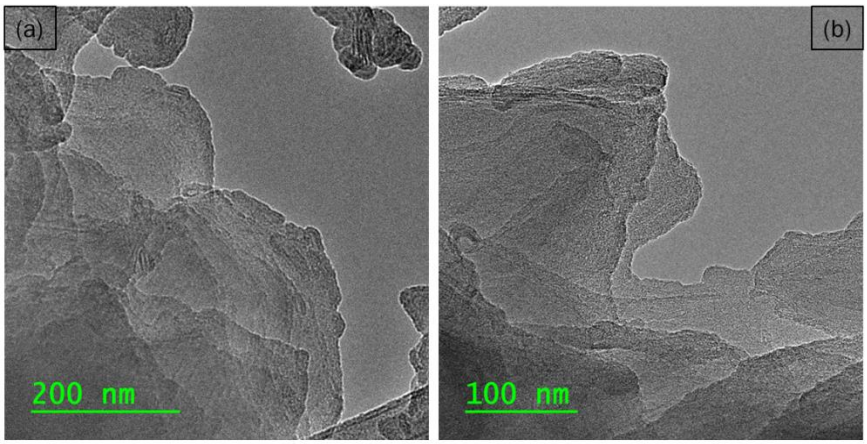
*[1]Note: The shelf life is approximate and requires proper storage conditions. Materials improperly stored can undergo degradation and lose their properties.*

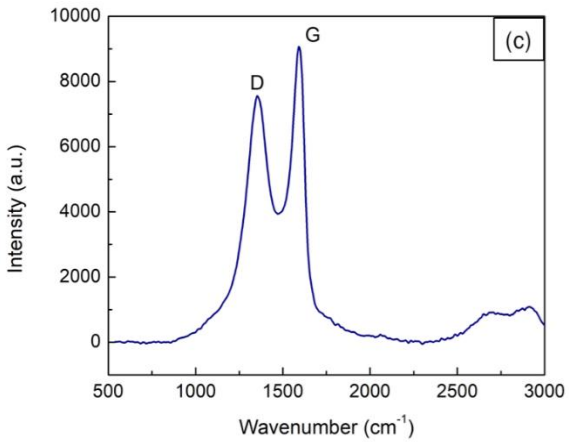
## Uses & Handling Recommendations

- Shipped as a powder or in solution. 25 mL and 50 mL in glass vials (bulk can be supplied upon request).
- Typical concentrations ~ 1, 2 or 4 mg/mL.
- Exposure of graphene oxide to elevated temperatures (>100 ° C) will cause sample degradation
- Sonication can be used to help disperse graphene oxide powder in water and other polar solvents.

Contact us for purchasing/customization options. DMM can tailor the oxidation degree of graphene oxide suitable for specific applications.

## Characterization Data




(d)

| Sample | Wt. (mg.) | %C | %H | %S | O% | C/O |
|---|---|---|---|---|---|---|
| GO-01 | 0.93 | 48.89 | 2.25 | 1.63 | 47.22 | 1.04 |
| GO-02 | 1.31 | 48.29 | 1.65 | 1.97 | 48.09 | 1.00 |
| GO-03 | 1.49 | 48.06 | 2.06 | 2.24 | 47.65 | 1.01 |
| Average | 1.25 | 48.41 | 1.99 | 1.95 | 47.65 | 1.02 |

Figure 1. (a) and (b) Bright field TEM image, (c) Raman spectrum, (d) Elemental analysis results and C/O ratio.

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