

石墨烯纳米片

产品说明



专注研发，只为更高品质

一、产品概述

1. 石墨烯纳米片 (Graphene Nanoplatelets, 简称GN) 采用昂星研发的特殊工艺制备, 其结构破坏小, 因而具有优异性能, 如机械性能、润滑性能和导电性能等。
2. 本品的径厚比大、尺寸小, 且厚度为纳米级别, 因而易与聚合物材料形成良好复合。因此, 可作为改性剂应用于橡胶、润滑油、高分子等材料中, 提升基底材料的机械性能、润滑性能和导电性能等。

二、产品参数



图1. 昂星GN产品和TEM图谱

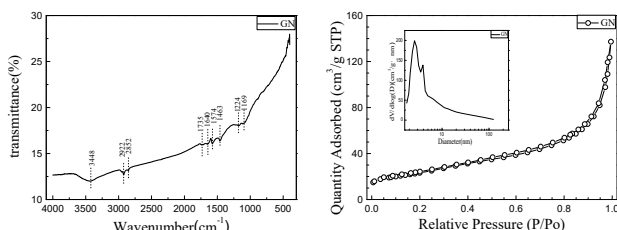


图2. 昂星GN产品FTIR分析和BET分析

技术参数	参数值
形貌	黑色粉体
厚度 (nm)	~20
片径 (μm)	0.2~1
碳含量 (wt.%)	~96
氧含量 (wt.%)	~3
灰分 (wt.%)	<1.0
比表面积 (m²/g)	~80
电导率 (S/m)	~20000

三、产品性质说明

1. 结构特点: 石墨烯纳米片呈片状, 片径在0.2μm~1μm之间, 具有较大的径厚比。
2. 分散性能: 本产品表面含有部分极性官能团, 且片径较小, 能在高分子材料中均匀分散。
3. 导电性能: 石墨烯纳米片结构完整, 导电性优异, 采用四探针测试法, 电导率可达20000 S/m。

四、应用情景举例

石墨烯纳米片具有较大的径厚比, 能与橡胶、高聚物等高分子材料进行良好的复合。添加石墨烯纳米片, 能有效提高橡胶的拉伸强度、抗磨性能等力学性能。



图3. 昂星GN产品和石墨烯橡胶图

五、注意事项

使用安全: 本产品为黑色粉末, 易飘散, 对人体的肺及呼吸道有害, 使用过程中请做好相应的粉尘防护。

贮存运输: 本品室温下密封保存。包装瓶为PS材质, 请远离热源。请勿与有机溶剂接触。

本说明书为简要产品说明, 具体产品说明请登录公司网站 www.ashinecarbon.com 查看及下载。

如果对上述内容存在任何疑问或需要相关文献, 欢迎联系我们: Sales@ashinecarbon.com

以上产品之物性仅供参考, 不作为本公司出货承诺书或验收准则。以上所提供的数据仅为一般通用信息, 为目前我方所了解的资料。因该产品适用及应用范围新而广, 有些甚至超出我方掌控, 因此, 即使我方没有考察到实际应用中的全部必要信息, 我方也不负任何责任。本公司保留改善产品参数之权利, 最终解释权归本公司所有。

Graphene Nanoplatelets

Product Information



FOCUS ON R&D
FOR SUPERIOR QUALITY

I. Product Overview

1. The Graphene Nanoplatelets prepared with a special process by Ashine are referred to as 'GN' for short. Due to their low rate of structural damage, they have excellent properties including mechanical properties, lubricity and electric conductivity.
2. The products have a large diameter-thickness ratio, a small size and a nanometer thickness, making them convenient for forming good composites with polymer materials. As such, they can be used as modifiers in rubber, lubricating oil, polymers and other materials to improve the mechanical properties, lubricity and electric conductivity of the base material.

II. Product Parameters

Technical Parameter	Parameter Value
Form	Black powder
Thickness (nm)	~20
Diameter (μm)	0.2~1
Carbon content (wt.%)	~96
Oxygen content (wt.%)	~3
Ash content (wt.%)	<1.0
BET (m^2/g)	~80
Electric conductivity (S/m)	~20,000

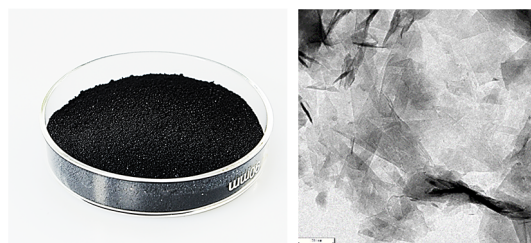


Fig1. Ashine GN Product and TEM Images

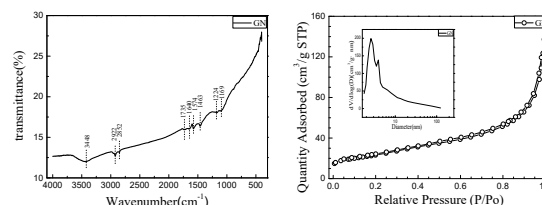


Fig. 2. Ashine GN Product FTIR Spectra and BET Diagram

III. Description of Product Properties

1. **Structural characteristics:** Graphene nanoplatelets are flaky, with a diameter between 0.2 μm and 1 μm and a large diameter-thickness ratio.
2. **Dispersion:** The surfaces of the products contain some polar functional groups, and their small size allows them to disperse evenly in polymer materials.
3. **Electric conductivity:** Graphene nanoplatelets have a complete structure and excellent electric conductivity reaching 20,000 S/m in a four-point probe test.

IV. Application Example

Graphene nanoplatelets have large diameter-thickness ratios and can compound well with such macromolecular materials as rubber and polymer. Adding graphene nanoplatelets can effectively improve such mechanical properties of rubber as its tensile strength and abrasion resistance.

V. Notice

Safe use: This product consists of a black powder which is prone to float. As it can be harmful to the lungs and respiratory tract, please ensure appropriate dust protection when it is used.

Storage and transportation: This product is stored at room temperature. The packing bottle is PS material. Please keep away from heat sources and any organic solvents.

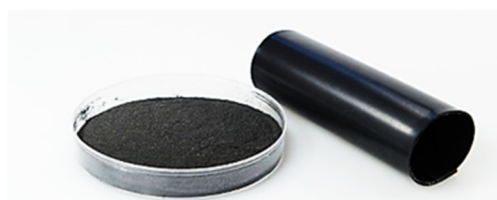


Fig. 3. Ashine GN Product and Graphene Rubber Pictures

This manual is a brief product description. Please visit the company's website at www.ashinecarbon.com to view and download a detailed product description. If you have any questions about the above or require the relevant literature, please contact us at Sales@ashinecarbon.com.

Properties of the above mentioned products are for reference only, and shall not be regarded as shipment commitment or acceptance criteria of the Company. All data provided above is general information we have learned as far. Due to new and wide application of the product, some even beyond our control, we will not bear any responsibilities in case we have not considered all necessary information in actual application. The Company reserves the right to improve product parameters as well as the final right of interpretation.