

氟化石墨烯纳米片

产品说明



专注研发，只为更高品质

一、产品概述

1. FG系列产品由于粒径、层数及氟碳比不同，呈现不同颜色，具有无毒、不可燃、无腐蚀和化学性稳定等特性。

2. 本系列产品具有高纯度、高氟碳比、高疏水、高润滑、高耐磨等优势，适用于特种润滑材料、三防材料、电池活性材料、吸音材料、传感器及核反应堆减速剂等领域。

二、产品参数

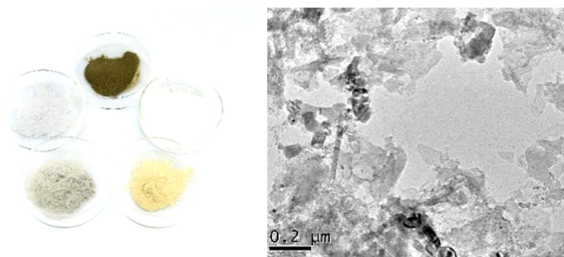


图1. 昂星氟化石墨烯纳米片产品图和TEM图谱

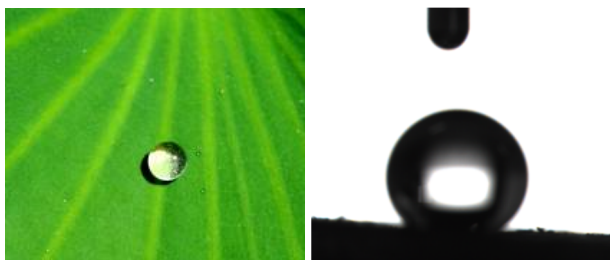


图2. 荷叶效应和昂星氟化石墨烯纳米片接触角分析

产品编号	形貌(粉体)	氟碳比	F含量(wt.%)	C含量(wt.%)
FG008	灰褐色	≥0.8	~ 56	~ 44
FG009	灰白色	≥0.9	~ 59	~ 41
FG010	灰白色	≥1.0	~ 61	~ 39
FG011	黄色	≥1.1	~ 64	~ 36
FG012	白色	≥1.2	~ 66	~ 34

三、产品性质说明

1. 超疏水性能：本产品由于氟含量高，使其表面能极低，特殊的层状结构使其具有优异的超疏水、防结冰、防尘性能，接触角为130°~150°。本品与石墨、石墨烯、聚四氟乙烯相比，其疏水性、疏油性、防尘性能更加优异。

2. 润滑性能：本品作为一种新型固体润滑剂，其润滑性能优于石墨、石墨烯、二硫化钼，特别是在苛刻气氛，如高速、高温、高压条件下，润滑效果更佳，且具有较好热稳定性。

3. 电化学性能：本产品替代氟作正极活性物质，是锂离子电池最佳活性材料。氟化石墨烯纳米片在电位的平稳性和能量密度等方面具有很大的优越性。

四、应用情景举例

作为润滑剂材料

采用乳化分散等技术，使其与润滑油脂进行调和，可使氟化石墨烯纳米片发挥优异的润滑性，以减少机件磨损，显著提升润滑油脂的润滑减磨性能。

该润滑材料可用作采暖设备自动控制装置滑动部位，吊车起重机导轮和滑动部位，高精度坐标镗床轴承，机床离合器等领域。本产品亦可用作切削剂，防止金刚石砂轮等磨具的气孔堵塞和灭弧；还可作为模铸、胶合板成形、粉末成型、烧结精压、塑料等金属模脱模剂；并可作为研磨剂，用于光学片的研磨。

五、注意事项

使用安全：使用过程中请做好相应的粉尘防护。

贮存运输：本品室温下性质稳定，保存时请勿与亲核试剂接触。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

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Fluorinated Graphene Nanoplatelets

Product Information



I. Product Overview

1. FG series products have different colors due to their different particle size, layer number and fluorine-carbon ratio. They are non-toxic, nonflammable, noncorrosive and chemical stable.
2. FG series products have such advantages as high purity, high fluorine-carbon ratio, high hydrophobicity, excellent lubricity and good wearability, making them suitable for the special lubricating materials, anti-corrosion materials, active materials, sound-absorbent materials, sensors, moderator materials in nuclear reactors and so on.

II. Product Parameters

Product Number	Form (Powder)	Fluorine-carbon	F content (wt.%)	C content (wt.%)
FG008	Taupe	≥0.8	~ 56	~ 44
FG009	Grey-white	≥0.9	~ 59	~ 41
FG010	Grey-white	≥1.0	~ 61	~ 39
FG011	Yellow	≥1.1	~ 64	~ 36
FG012	White	≥1.2	~ 66	~ 34

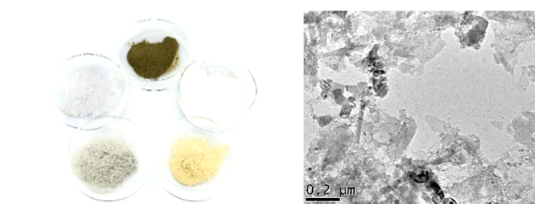


Fig. 1. Ashine Fluorinated Graphene Nanoplatelets Products and TEM Images



Fig. 2. Lotus Effect and Ashine Fluorinated Graphene Nanoplatelets Contact Angle Analysis

III. Description of Product Properties

1. **Super hydrophobic property:** The surface energy of the products is very low due to their high fluorine content, and their special layered structure makes them excellent in super hydrophobicity, anti-icing and dustproofing, with a contact angle of 130-150 degrees. Compared with graphite, graphene and polytetrafluoroethylene, these products have better hydrophobicity, lipophobicity and dustproofing properties.
2. **Lubrication performance:** As a new type of solid lubricant, their lubrication performance is better than that of graphite, graphene and molybdenum disulfide. Especially in such harsh environments as conditions of high speed, high temperature and high pressure, they have superior lubrication property and good thermal stability.
3. **Electrochemical performance:** The product replaces fluorine as positive active materials and is the best active material for lithium/carbon fluoride battery. They have great advantages in potential stability and energy density.

IV. Application Example

Lubricant Material

The products can be mixed with grease after gas crushing, emulsion dispersion or other technologies, allowing the graphite nanoplatelets to provide excellent lubricity, reduce the wear of parts and markedly improve the lubricating and grinding performance of lubricating grease.

Such lubricant material can be used on the sliding parts of automatic heating equipment control devices, wheels and sliding parts of cranes, high-precision coordinate rasper bearings, machine tool clutches, etc. It can be used as a cutting agent to prevent the hole clogging and arc extinguishing of such abrasives as diamond grinding wheels. It can also be used as a metal mould release agents in die-casting, plywood forming, powder forming, sintering, pressure-sizing and plastics, as well as serving as an abrasive for optical plate grinding.

V. Notice

Safe use: Please ensure appropriate dust protection when it is used.

Storage and transportation: This product is stable at room temperature. Do not touch the nucleophile when it is stored. The packing bottle is PS material. Please keep away from heat sources. Do not touch with organic solvents.

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.

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