

产品综述 Product summary

氟化石墨是氟原子插入石墨层间的一种石墨层间化合物，粉末状固体，颜色随氟碳比的提高逐渐由黑变为灰白，直至白色。氟化石墨具有极低的表面能、优异的化学和热稳定性、极好的润滑性能以及超高理论比容量，使其在固态润滑、防腐防污涂料、锂电池和其它应用领域具有良好的应用前景。氟化石墨根据采用原料不同可细分为氟化鳞片石墨、氟化球形石墨、氟化膨胀石墨及氟化纳米石墨等种类。

Fluorographite is a kind of graphite interlayer compound in which fluorine atoms are inserted into graphite layers. Fluorographite is a powder solid, and its color gradually changes from black to gray to white with the increasing of F/C ratio. Fluorographite has been widely used in solid lubrication, corrosion protective and antifouling coatings, Li-CF_x batteries and other fields due to the merits of extremely low surface energy, excellent chemical and thermal stability, outstanding lubrication performance and super theoretical specific capacity. Fluorographite can be subdivided into fluorinated flake graphite, fluorinated spherical graphite, fluorinated expanded graphite and fluorinated nano-graphite according to different raw materials.



氟化石墨（能量型）
Fluorographite (energy-type)



氟化石墨（功率型）
Fluorographite (power-type)



氟化石墨（倍率型）
Fluorographite (high discharge rate-type)

产品名 Product name	纯度 Purity	氟含量 Fcontent	粒径 (D50) Particle size	振实密度 Tap density
氟化石墨 Fluorographite	≥ 99%	45-65 wt. %	≤ 20 μm	≥ 0.9g/cm ³

电化学性能 Electrochemistry performance

1

氟化石墨作为正极材料应用于锂氟化碳电池，在 C/10 的放电倍率下，可适用于能量型、功率型和倍率型一次电池。

Fluorographite is used as cathode material of lithium-fluorocarbon batteries, at the discharge rate of C/10, it can be applied in energy-type, power-type and high discharge rate-type primary batteries.

2

能量型氟化石墨放电平台 ≥ 2.5V，比容量 > 800mAh/g，比能量高达 2000Wh/kg 以上，是一种性能优秀的锂一次电池正极材料。

The discharge platform of energy-type fluorographite is equal or greater than 2.5V, the specific capacity of energy-type fluorographite is more than 800mAh/g and its specific energy is more than 2000Wh/kg, which is a kind of cathode material with excellent performance in lithium primary battery.

3

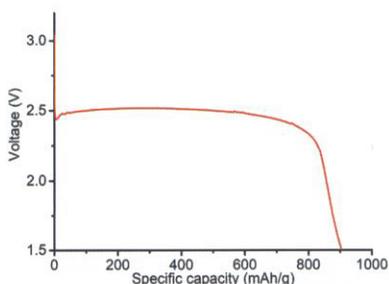
功率型氟化石墨放电平台 ≥ 2.8 V，比容量 > 700 mAh/g，比能量高达 1900Wh/kg 以上，综合性能极佳，在不同的温度和放电电流下均有良好的性能表现，适用于需要更高放电电压和功率密度的场合。

The discharge platform of power-type fluorographite is equal or greater than 2.8V, the specific capacity of power-type fluorographite is more than 700mAh/g and its specific energy is more than 1900Wh/kg. The combination properties of power-type fluorographite are excellent, which exhibits prominent performance at different temperature and discharge current, it is suitable for the situation requiring higher discharge voltage and higher power density.

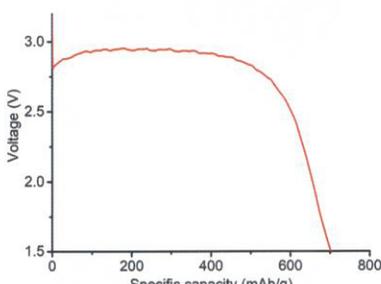
4

倍率型氟化石墨由能量型氟化碳材料改性而来，大幅提升了导电性，可实现高倍率放电。在 5C 倍率下放电平台 ≥ 2V，相比 0.1C 比容量保持率 ≥ 70%，适用于对放电电压无特殊要求，但需要大电流放电的场合。

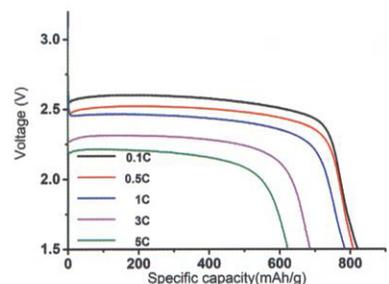
The high discharge rate-type fluorographite is modified by the energy-type fluorographite, the modification greatly improves the conductivity, as a result it can discharge at the high rate. The discharge platform of high discharge rate-type fluorographite is equal or greater than 2V at the discharge rate of 5C, comparing with 0.1C rate the capacity retention ratio is equal or greater than 70%. It is suitable for the occasions without special requirement for discharge voltage but requiring high current discharge.



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