

Graphene

Graphene Powder

Product manual



Graphene Powders

【Product Introduction】

Graphene has well-known super physical characteristics in strength and ultra-thin, and it is an excellent material for areas of conductivity, lubrication, anticorrosion, sealing and high temperature resistance. It is widely used in super capacitor, engine oil, lubricating oil, lithium battery, RFID, flexible electrode, solar cell, printing circuit and high sensitive biosensor.

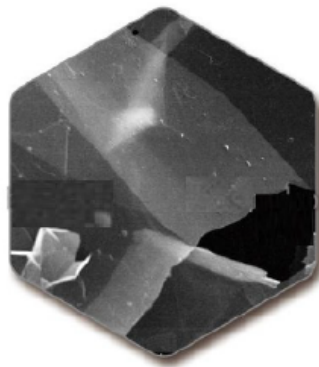
It is a new product of graphene with high purity, especially suitable for electronic products. The crystal lattice structure of graphene and its excellent physical properties are well preserved through our green process. The product has very low oxygen, unified particle size distribution and stable performance, and therefore has extensive market application.

【Main Components】 Graphene

【Product Picture】



Black flocculent powder



Scanning electron microscope photograph



Transmission electron microscope photograph

【Technical Data】

Table 1: Technical Data Sheet of Graphene Product

Physical properties	Unit	Technical data	
		Perpendicular to the surface of graphene	Parallel to the surface of graphene
Electrical conductivity	S/m	10^2	10^7
Powder electrical conductivity	S/m	$\geq 15,000$	
Thermal conductivity	W/m·k	6	3,000
Coefficient of thermal expansion	1/K	$(0.5 - 1.0) \times 10^{-6}$	$(4 - 6) \times 10^{-6}$
The tensile modulus	GPa	-	1,000
Tensile strength	GPa	-	5

Table 2: Technical Data Sheet of SG-01005 Product

Specification	Unit	Technical data	Test Method
Appearance		Black grey, slightly metallic color, colour and lustre is uniform.	Visual
Carbon	wt%	≥ 99.90	Enterprise Standard Q/02 NMK 001-1997
Graphene		≥ 99.90	
Ash		≤ 0.10	
Oxygen		≤ 0.01	
Thickness	Number of layers	≤ 10	TEM
Flake diameter D50	μm	1 ± 0.5 、 3 ± 0.5 、 5 ± 0.5	SEM 5000x
Total metal content	ppm	≤ 50	ICP
Element content	ppm	Fe ≤ 20	ICP-AES
		Co ≤ 5	
		Ni ≤ 5	
		Mn ≤ 5	
		Cu ≤ 5	
		Zn ≤ 5	
Resistivity (ρ)	$\Omega \bullet \text{m}$	$\leq 1.0 \times 10^{-3}$	Pressing pellet method 5MPa GB/T 15064-2008

【Applications】

Suitable applications of this product includes (but not limited to): energy storage and power battery, new energy, solar cell, electronic devices, electronic process engineering, printing, antistatic, electromagnetic shielding, high performance coatings and light-weight high-strength composites and so on.

【Directions and Safety】 :

1. Please read the safety data sheet of the products (MSDS) and hazardous materials identification system (HMIS), before using of this product.
2. Be sure to keep a well-ventilated room when using this product.
3. This content is based on the data and information that can be obtained at present time.

【Other instructions on safety, health, and environmental protection】

1. The cap of packing barrel of product must be tight. Caution must be taken during the transportation and loading/unloading. The packing cannot be placed inverted.
2. When used under high temperature, avoid direct contact on skin. Wear goggles and insulated gloves when using this product.
3. For disposal, please follow all relevant laws, rules, and regulations.

【HMIS(Hazardous Material Identification System)】

HEALTH	1
FLAMMABILITY	0
REACTIVITY	0
PERSONAL PROTECTION	B

Classification:

- 0=No Effecton**
- 1=Light**
- 2=Moderate**
- 3=High**
- 4=Extreme**

Personal Protective Equipment:

A=goggles; B=goggles + Glove