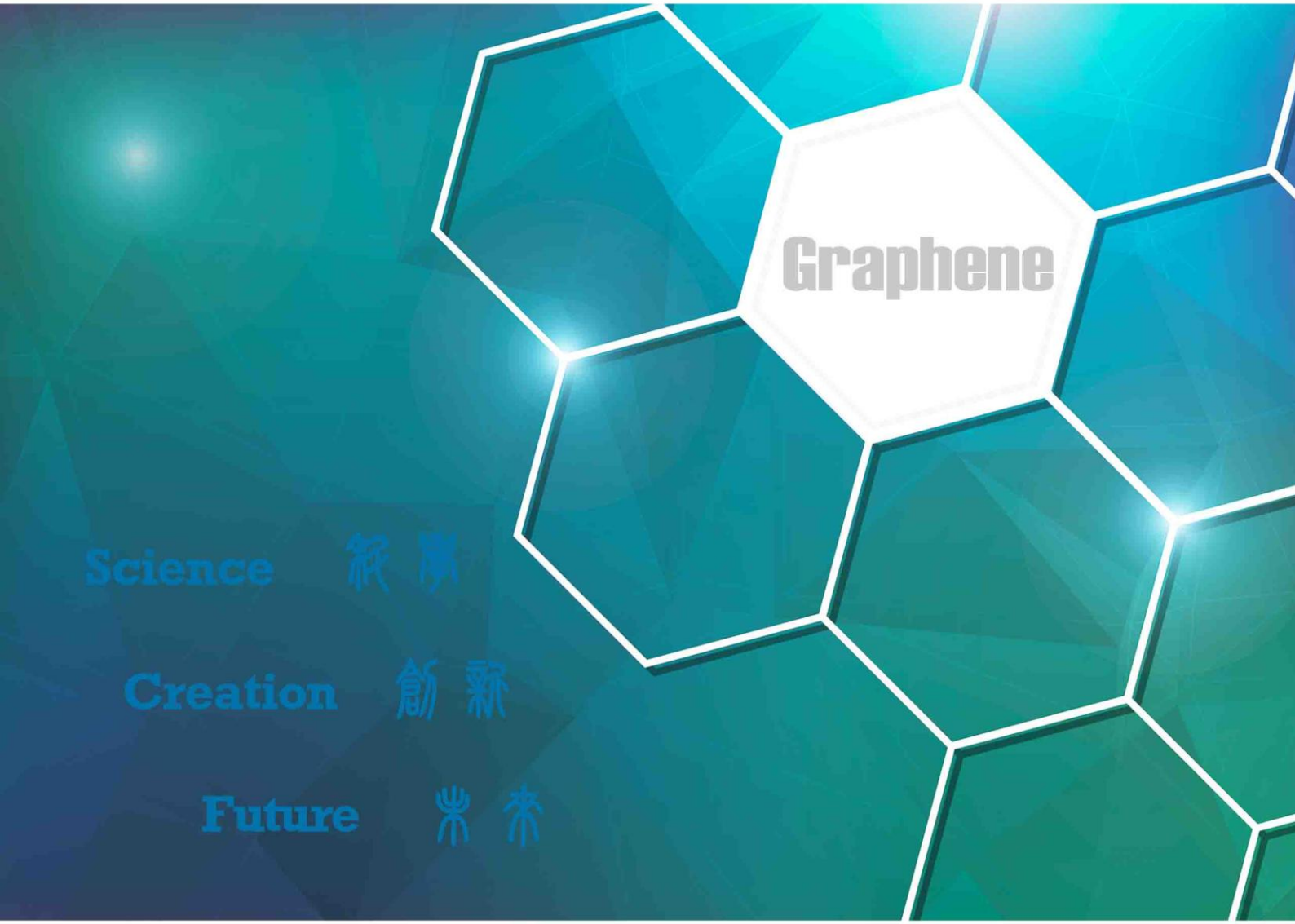
Nanotech

Graphene

Graphene Powder

Product manual



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Graphene Powders

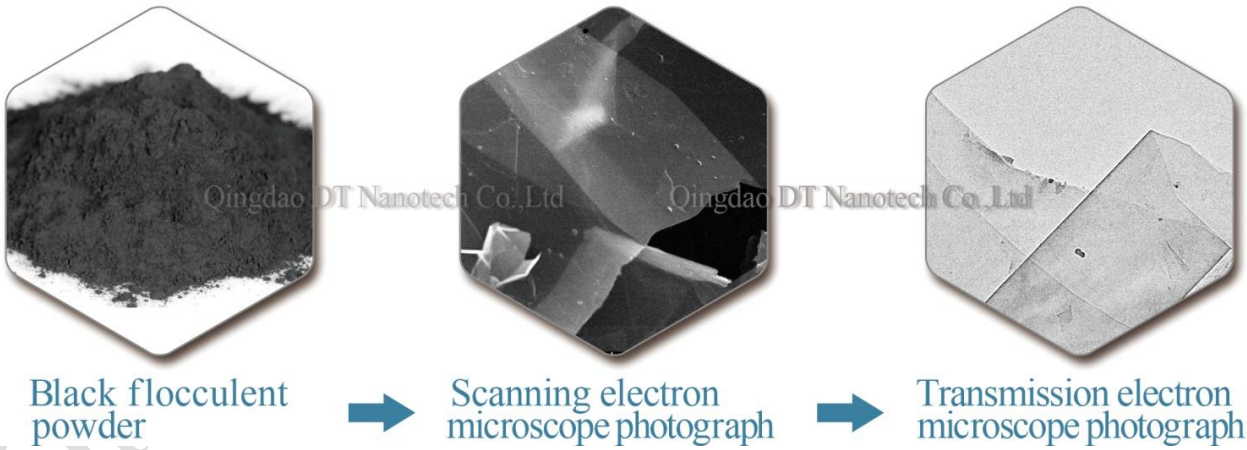
【Product Introduction】

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.

Lu Xi – Graphene Nanoplatelets series, developed by Qingdao DT Nanotech Co., Ltd, is a new product of graphene with high purity, specially suitable for electronic products. The crystal lattice structure of graphene and its excellent physical properties are well preserved through our green process developed by Qingdao DT. The product has very low oxygen, unified particle size distribution and stable performance, and therefore has extensive market application.

【Main Components】 Graphene

【Product Picture】



【Technical Data】

Table 1: Technical Date 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	≥ 15,000	
Thermal conductivity	W/m ŀk	6	3,000
Coefficient of thermal expansion	1/K	(0.5 - 1.0) x 10^{-6}	(4 - 6) x 10^{-6}
The tensile modulus	GPa	-	1,000
Tensile strength	GPa	-	5

Table 2: Technical Data Sheet of SG-01005 Product

Specifications	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	5±1.0	ISO 13320-2009
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)	Ω.m	≤1.0 x 10^{-3}	Pressing pellet method 5MPa GB/T 15064-2008

【Applications】

Suitable applications of this product includes (but not limitted 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.

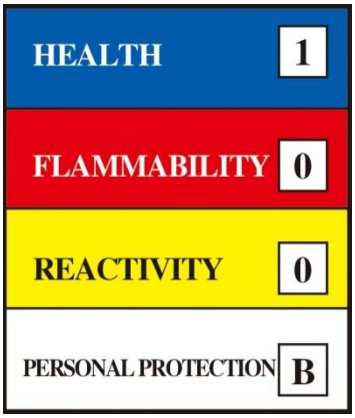
【Directions and Safety】:

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)】



Rank classification：

0= None
1= Mild
2=Moderate
3=High
4=Extreme

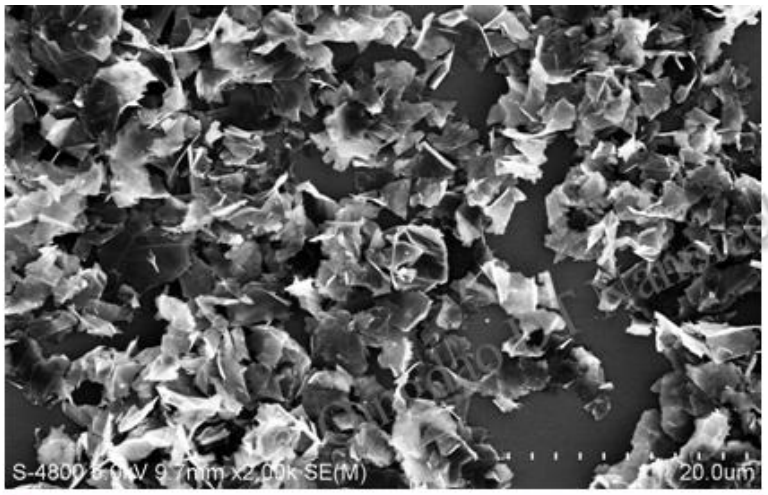
Personal protective equipment：
A= Glasses; B= Glasses + Gloves

【MSDS(Material Safety Data Sheet)】

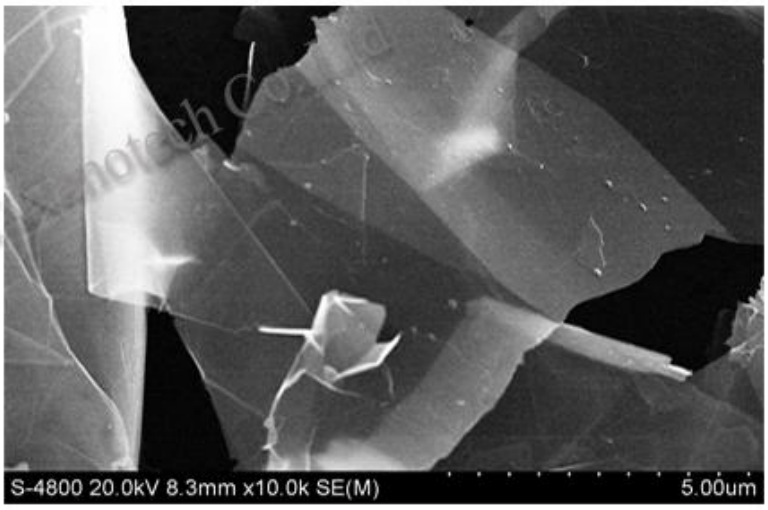
See appendix for details.

【Appendix】

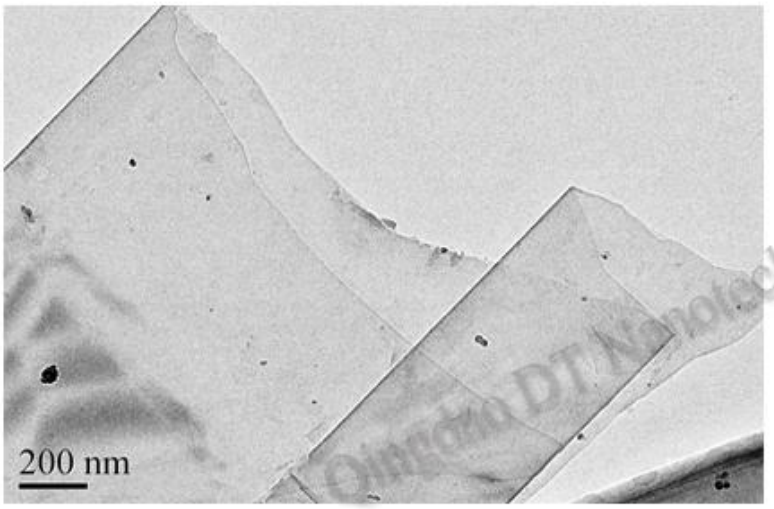
All data reported in this description was obtained in laboratories. The actual measured data from different lab may be slightly different due to individual equipment and changes of the environment. If the above data are changed, the latest instructions are subject to the company's latest instructions.



Scanning electron microscope photograph



Scanning electron microscope photograph



Transmission electron microscope photograph