

GRAPHENE OXIDE



JMC Graphene Oxide Introduction

JMC's graphene and graphene oxide technology stems from our long history as a world-class chemical manufacturer. JMC manufactures the world's highest quality saccharin. We produce saccharin on a large scale using a completely vertically integrated process where we use sulfuric acid as an oxidising agent and our own raw materials. JMC's graphene oxide production begins with graphite and utilises the expertise that we have developed over the past 65 years.

JMC has developed processes to overcome some of the problems associated with the production of graphene oxide on a large scale. In particular, we have applied our expertise in quality assurance with a focus on controlling the lateral size of graphene oxide. This enables us to tune the graphene oxide properties to meet the requirements of a variety of applications. JMC also has extensive, large-scale waste water treatment facilities that enable us to scale the production of graphene oxide while complying with South Korea's strict safety and environmental regulations.

JMC is now positioned to sustainably produce graphene and graphene oxide on a large scale and is looking for partners to supply this material to.



JMC Core Technology

- >> Reaction : Control of exothermic reaction (using strong oxidants)
- >> Product : Lateral size control, low metal and chloride content
- >> Application : HVDC cable, batteries, radiation shielding, light-weight materials, composites, barrier films.

JMC Products

JMC Product Specifications

Subject	Unit	Spec	Standard Sample	Test Method
Concentration	(%)	0.5-1.5	0.5, 1.0	
Carbon content	(%)	40-55	49.50	EA
Oxygen content	(%)	40-55	49.20	EA
XRD 2θ value	(°)	9.5-10.5	9.80	XRD
Particle Size	(μm)	Selectable Size	< 40 μm < 20 μm < 5 μm	PSA
Thickness	(nm)	≤2.0		AFM
K content	(ppm)	≤30		ICP - OES
Mn content	(ppm)	≤30		ICP - OES
Other metals	(ppm)	≤30		ICP - OES
Cl content	(%)	None		Titration
pH		3.0-5.0		pH Meter

JMC Products

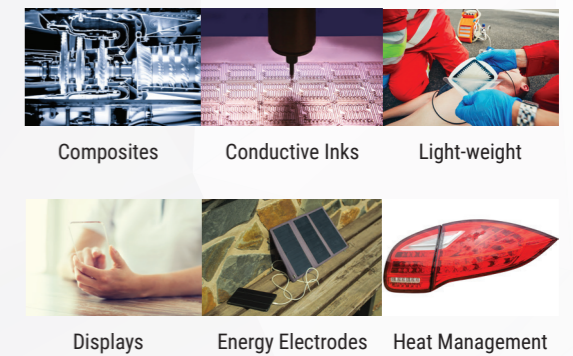
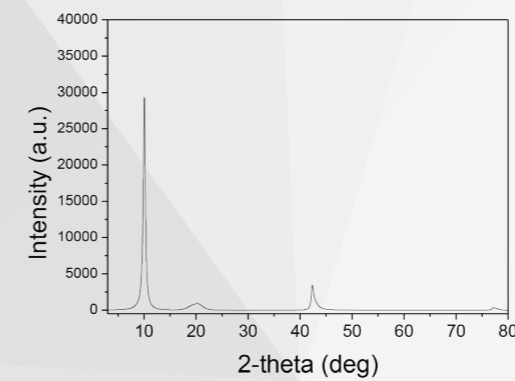
Product	Concentration	Particle Size (Lateral Size)	D90	D50	D10	Mean
JGO-40	0.5-1.5%	< 40 μm	37.6	14.6	7.32	20.17
JGO-20	0.5-1.5%	< 20 μm	19.9	11.8	7.3	13.21
JGO-05	0.5-1.5%	< 5 μm	4.0	2.0	1.5	2.65

JMC Special Grade Products (custom-made products)

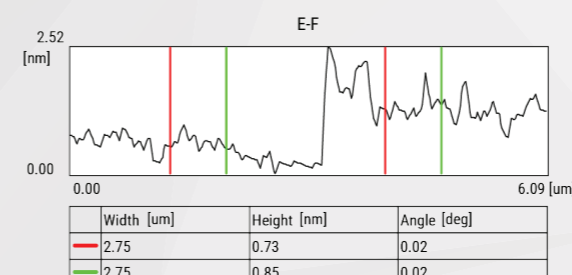
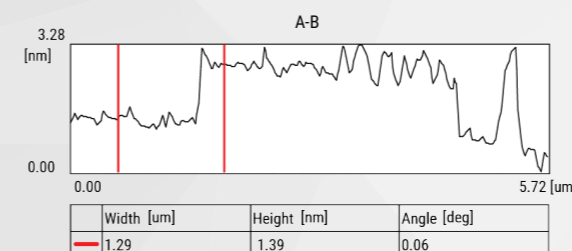
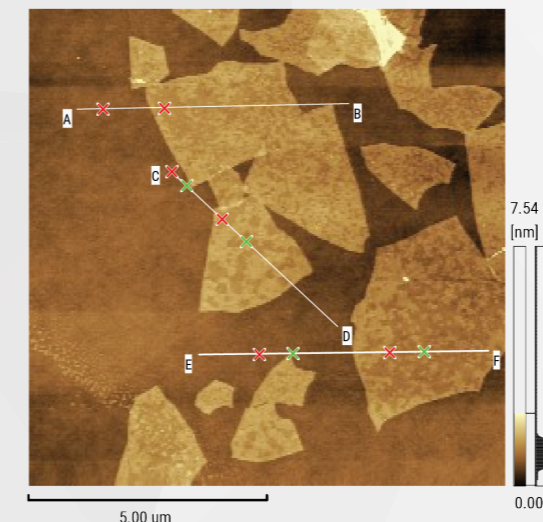
Product	Product Features	Specifications
JGO-HC	High Concentration	2.0 % < Conc. < 10% pH > 13
JGO-LM	Low Metal	Metal Specification < 10 ppm
JGO-AF	Alkylamine-functionalized (Polymer and Organic Solvent Dispersion)	C6-C12 alkylamine surface treatment Powder or dispersion in NMP Carbon content ≥ 50% Nitrogen content ≤ 2%

Product Analysis Data

X-Ray Diffraction



Atomic Force Microscopy



Particle Size Analysis

