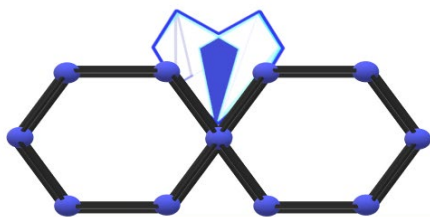


GRAPHENE PRODUCT SPECIFICATION REPORT



PVT. LTD.

BLUE GRAPHENE

www.bluegraphenepvtltd.com

BLUE GRAPHENE: NATURALLY 99+ | PRECISION AND PURITY REDEFINED

About Us

Blue Graphene Pvt. Ltd., located in Kurunegala district, Sri Lanka, is a leader in graphene manufacturing, delivering high-purity graphene products with 99.99% carbon content. Using proprietary technologies developed collaboratively in Sri Lanka and Germany, we ensure precision, consistency, and exceptional quality in all our products.

Contact Information:

- Website: www.bluegraphenepvtltd.com
- E-mail: info@bluegraphenepvtltd.com

MAIN USES OF GRAPHENE: REVOLUTIONIZING MODERN APPLICATIONS

1. Electronics and Semiconductors

- Used in transistors, flexible displays, and high-speed processors due to its exceptional electrical conductivity.

2. Energy Storage and Batteries

- Enhances lithium-ion batteries, supercapacitors, and fuel cells for higher capacity and faster charging.

3. Composites and Materials

- Strengthens plastics, metals, and other materials while reducing weight, making it ideal for aerospace and automotive industries.

4. Sensors

- Enables highly sensitive sensors for detecting gases, chemicals, and biological markers.

5. Thermal Management

- Serves as an excellent heat conductor in electronics and cooling systems.

6. Biomedical Applications

- Used in drug delivery, biosensors, and tissue engineering due to its biocompatibility.

7. Water Filtration and Purification

- Facilitates advanced membranes for desalination and water treatment.

8. Solar Cells and Renewable Energy

- Improves the efficiency of photovoltaic cells and energy harvesting systems.

Graphene's versatility makes it a game-changing material across diverse industries.

1. GRAPHENE OXIDE LIQUID (GO 7+)

Graphene Oxide Liquid is a high-quality, stable dispersion of graphene oxide particles, manufactured with meticulous precision.

Specifications:

- Moisture Content: 75% - 88%
- Layer Count: 1 to 5 layers
- Purity: 99.99% carbon content
- Appearance: Uniform colloidal suspension •
Color: Black



Additional Details:

- Produced using proprietary technologies that combine Sri Lankan natural resources with German engineering expertise.
- Maintains consistent oxidation levels and superior dispersion quality.

1. GRAPHENE OXIDE LIQUID (GO 7+)

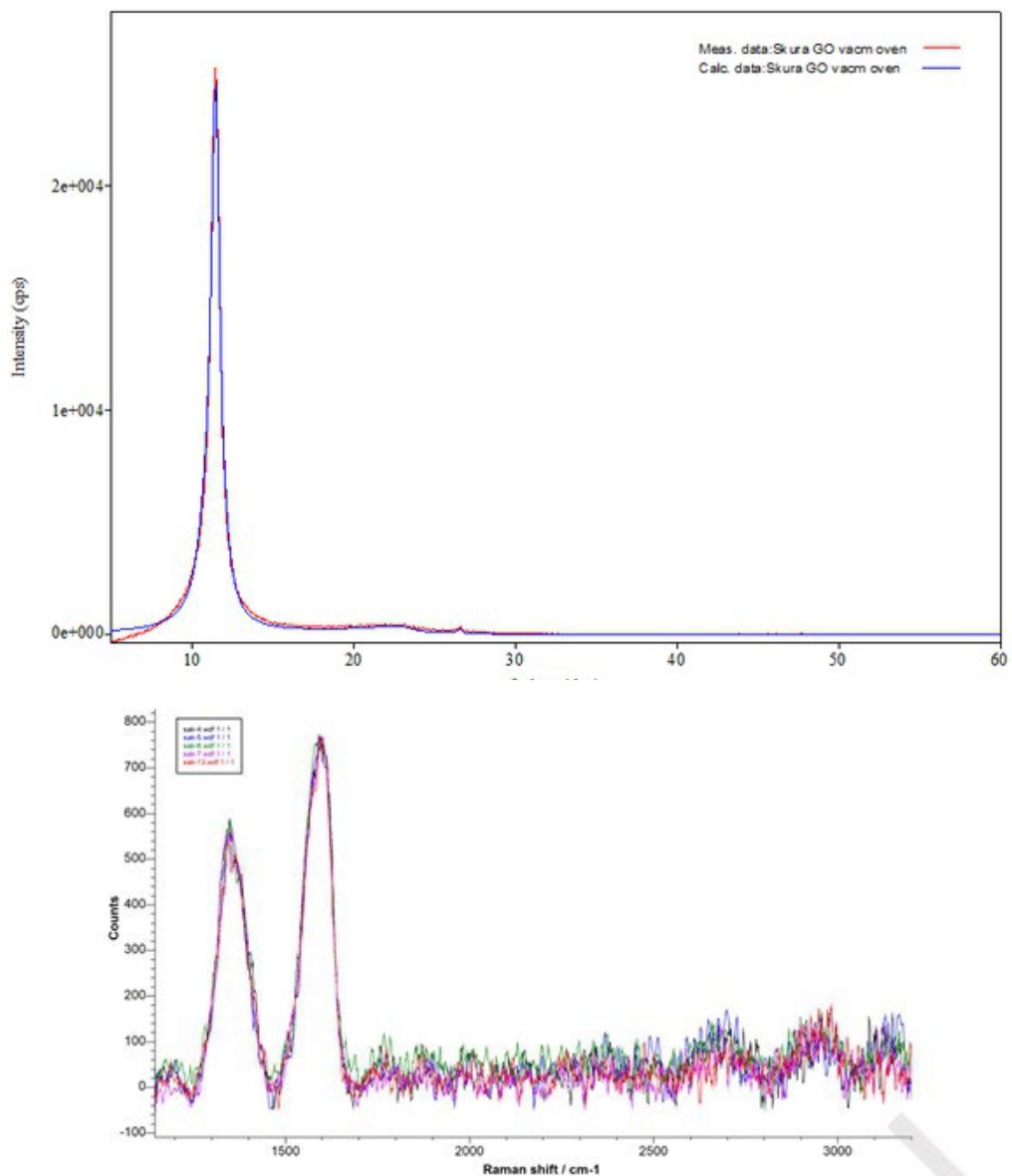


Figure 1: Representative Raman spectra of SGO showing D-band and G-band peaks

2. GRAPHENE OXIDE SHEETS (GO SHEETS)

Graphene Oxide Sheets are ultra-thin layers of oxidized graphene with outstanding structural uniformity and high purity.

Specifications:

- Thickness: 0.34 nm per layer •
Layer Count: 1 to 5 layers
- Purity: 99.99% carbon content •
Surface Area: >300 m²/g
- Oxygen Content: Precisely controlled for optimized quality •
Color: Brownish to dark brown



Additional Details:

- Manufactured using advanced exfoliation techniques blending Sri Lankan and German technologies.
- Uniform layer thickness and high interlayer spacing ensure exceptional consistency.

3. Reduced Graphene Oxide (rGO 7+)

Reduced Graphene Oxide is a premium material engineered for high conductivity and superior mechanical properties.

Specifications:

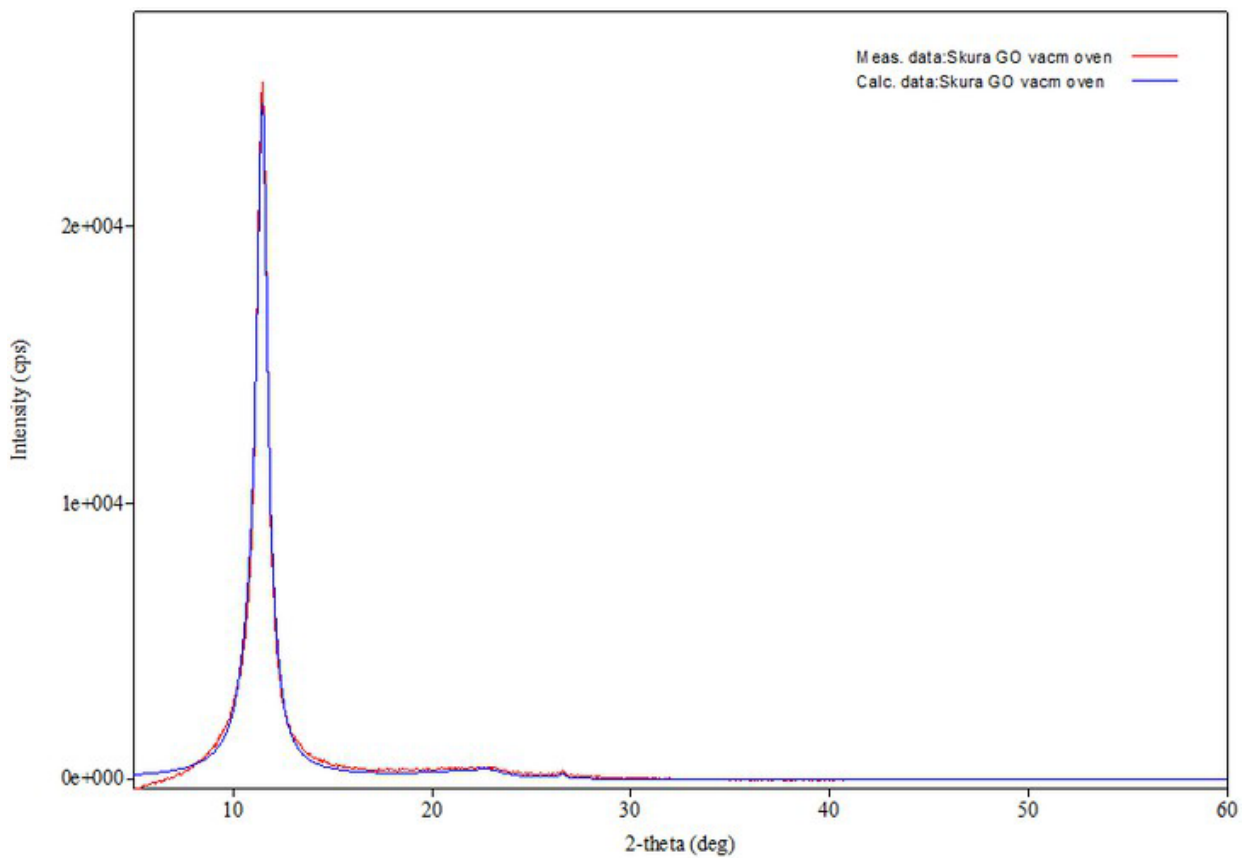
- Layer Count: 1 to 5 layers
- Purity: 99.99% carbon content •
Surface Area: >500 m²/g
- Thickness: 0.34 nm per layer
- C/O Ratio: >10:1 (minimal oxygen content) •
Color: Dark black



Additional Details:

- Produced using advanced reduction processes integrating Sri Lankan vein graphite and German innovations.
- Minimal defects and exceptional structural uniformity.

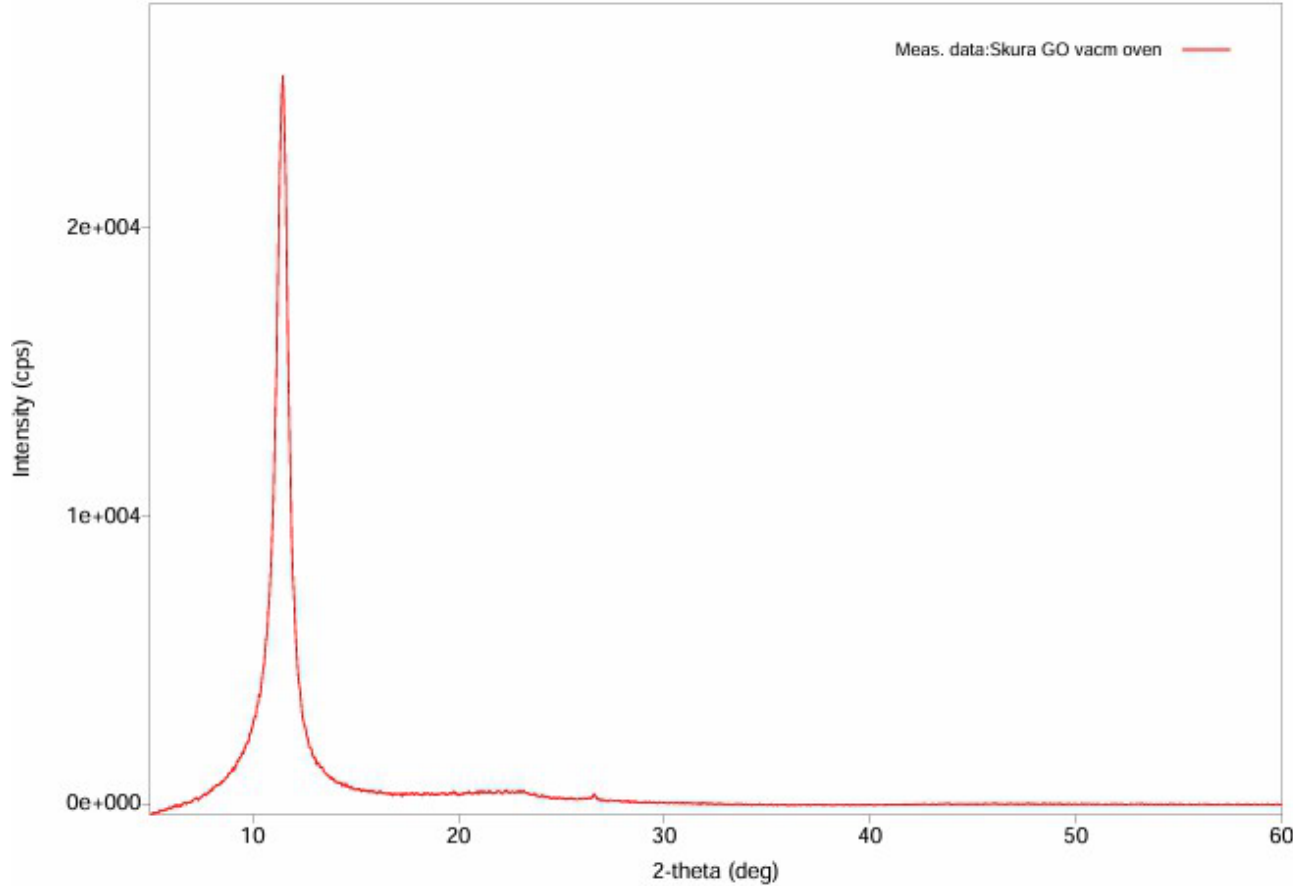
XRD Report - Graphene



Measurement conditions

X-Ray	40 kV , 30 mA	Scan speed / Duration time	3.0000 deg./min.
Goniometer		Step width	0.0500 deg.
Attachment	-	Scan axis	2theta/theta
Filter		Scan range	5.0000 - 60.0000 deg.
CBO selection slit	-	Incident slit	2/3deg.
Diffrected beam mono.		Length limiting slit	-
Detector	Scintillation counter	Receiving slit #1	2/3deg.
Scan mode	CONTINUOUS	Receiving slit #2	0.45mm

XRD Report - Graphene



Peak list							
No.	2-theta(deg)	d(ang.)	FWHM(deg)	Size(ang.)	Phase name	Chemical formula	DB card number
1	11.452(12)	7.721(8)	0.749(18)	61.9(9)	Unknown	Unknown	0
2	22.8(2)	3.90(4)	5.8(5)	6.8(9)	Unknown	Unknown	0
3	26.613(14)	3.3468(17)	0.31(5)	135(23)	Unknown	Unknown	0

Graphene Oxide in Concrete Strength Testing

Blue Graphene high-quality Graphene Oxide was tested for its impact on concrete strength at a reputed facility in Australia. The results revealed that concrete mixed with Graphene Oxide demonstrated a 29% increase in strength compared to standard concrete.

Compressive strength tests were conducted at 7 and 28 days, following standard procedures and the results are depicted in Figure 6.

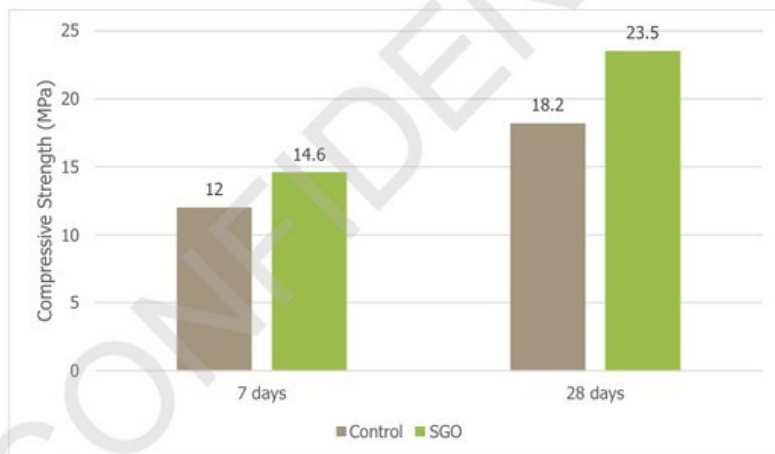


Figure 6: Compressive Strength Results

The results demonstrated significant performance enhancements in the SGO-modified composites:

7-day compressive strength: A 22% increase over the control mix.

28-day compressive strength: A 29% increase over the control mix.

These results indicate the potential of SGO to accelerate early strength gain while also delivering substantial improvements in long-term performance. The enhanced properties are attributed to mechanisms such as crack arresting, improved hydration due to water affinity, and the reduction of capillary pores.

This breakthrough highlights the exceptional properties of Graphene Oxide and its ability to significantly enhance the structural performance of concrete. The results reaffirm Blue Graphene's commitment to providing innovative, high-performance materials for advanced engineering and construction solutions.

4. Special Conductive Graphite (CG)

Blue Graphene's Special Conductive Graphite is a uniquely engineered material designed for superior electrical conductivity and precision performance. Developed using proprietary technology, this graphite features high connectivity, uniform particle size, and controlled moisture content. Its unmatched conductivity and consistency make it a premium choice for advanced industrial requirements.

Specifications

- Conductivity: <2600 S/m
- Particle Size: >45 microns (ensuring uniformity and high structural integrity)
- Moisture Content: >0.2%
- Appearance: Fine, high-purity graphite powder with consistent granularity
- Purity: Manufactured to meet rigorous quality standards, ensuring superior performance

This material is produced using our exclusive processes, making it a non-comparable and unparalleled conductive graphite in the market.

4. Special Conductive Graphite (CG)

Blue Graphene's Special Conductive Graphite has been rigorously tested at the Industrial Technology Institute (ITI), Sri Lanka, alongside samples from leading manufacturers worldwide. The results demonstrated its superior performance, with a conductivity of 2644.5 S/m, making it the highest-performing material among all tested samples. This achievement highlights the unmatched quality of our graphite, developed through proprietary manufacturing processes, and cements Blue Graphene's position as a leader in conductive graphite production globally.



... Continuation Sheet

CONDUCTIVITY MEASUREMENT OF THE PROVIDED SAMPLES

Report No. CTS 2412796

Test Results: Table 1

Sample	Resistance (Ω)	Resistivity (ρ)	Conductivity (S/m)
A	0.04226	3.781×10^{-04}	2644.5
B	0.04819	4.312×10^{-04}	2319.1
C	0.05442	4.869×10^{-04}	2053.6
D	0.04396	3.933×10^{-04}	2542.3
E	0.05725	5.123×10^{-04}	1952.1
F	0.05464	4.889×10^{-04}	2045.4
G	0.05496	4.918×10^{-04}	2033.4

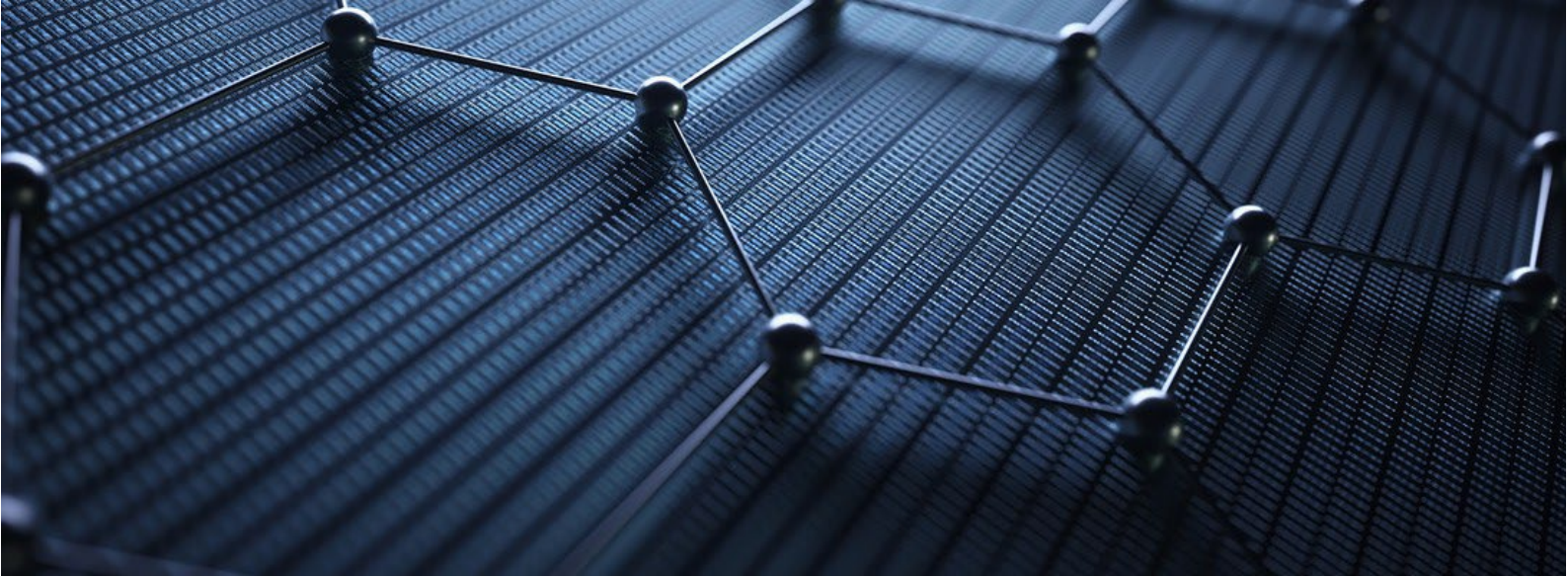
Conclusion:

As per the Table 1, test results samples A, B, and D exhibited the highest conductivity values. Therefore, respectively A, B, D samples could be recommended for commercial applications.

The test was conducted by A M K L Abeykoon and M H T Dulaj

A M K L Abeykoon
Research Scientist
2024/08/09

Authorized Signatory
L D C Nayanajith
Senior Research Scientist
2024/08/09



Why Choose Blue Graphene?

Exceptional Purity: 99.99% carbon content ensures premium quality for all graphene products.

Proprietary Technologies: Manufactured using advanced techniques developed in Sri Lanka and Germany.

Premium Raw Material: Sourced from Sri Lanka's natural vein graphite, globally recognized for its purity and crystallinity.

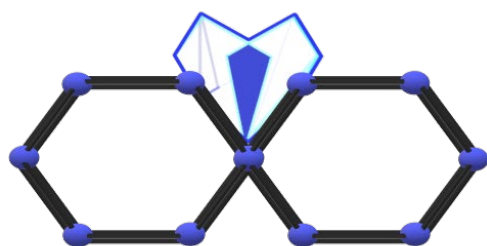
Precise Layering: Products maintain consistent layer counts of 1 to 5 layers.

Sustainable Manufacturing: Commitment to eco-friendly practices throughout the production process.

Contact Us

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