

MATERIAL SAFETY DATA SHEET REDUCED GRAPHENE OXIDE



SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product Details

Name	Reduced Graphene Oxide
Product Code	CGT-RGO
REACH NO.	A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified Uses:

Additive material for energy, coating, electronics, composites, etc. For professional use only. For R&D and industrial use only.

1.3 Supplier Details

Supplied By:	Ceylon Graphene Technologies Pvt Ltd, 100/1, Sri Jayawardenepura Mawatha, Rajagiriya, Sri Lanka
Telephone:	+ 94 0713 666 888 + 94 0770 411 985
Email:	info@ceylongraphene.com

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008. Substance properties have been derived from graphite (bulk substance); the properties of the single/few-layer nanomaterial is under evaluation and to some extent not known.

2.2 Label elements

No label required.

2.3 Other hazards

Electrically conductive material; avoid accumulation of dusts or powders where this could cause shorting of electrical circuits or components.

SECTION 3: Composition/Information on Ingredients

3.1 Substances

Name	Product Identifier	%	GHS-US Classification
Carbon	(CAS-No.) 7440-44-0	>99.0	Comb. Dust
Oxygen	(CAS-No.) 7782-44-7	>0.99	Not Classified

Synonyms:	rGO, Reduced Graphene Oxide
Formula:	C _x H _y O _z
Molecular Weight:	N/A

SECTION 4: First Aid Measures

4.1 Description of first aid measures

After Inhalation

If inhaled, remove to fresh air. If not breathing give artificial respiration. Call a physician.

After skin contact

In case of skin contact, wash with soap and flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

After eye contact

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

After Ingestion

If swallowed, wash out mouth with water. Call a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

Contact a poison centre immediately in case of ingestion or inhalation of a large amount of product. No specific treatment.

SECTION 5: Firefighting

5.1 Extinguishing media

Suitable extinguishing media: Dry chemical, alcohol-resistant foam, carbon dioxide or water spray. Consult with local fire authorities before attempting large scale firefighting operations.

5.2 Special hazards arising from the substance of mixture

Hazardous combustion products: Carbon oxides (CO, CO₂)

5.3 Advice for firefighters

Wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

General Measures: Wear personal protective equipment (section 8). Avoid dust formation. Ensure room is well ventilated.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Containment and cleaning

Contain and clean up spill if safe to do so using an electrically protected vacuum cleaner or by wet brushing. Dispose of dry waste in closed container for proper disposal according to local regulations.

SECTION 7: Handling and Storage

7.1 Precautions for safe handling

Avoid formation of dust and aerosols. Provide exhaust ventilation in places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry and well-ventilated place inside of a tightly sealed container. Reseal containers that have been opened and keep upright to prevent leakage.

7.3 Specific end uses

Additive material for energy, coating, electronics etc. For professional use only. For research & development use only.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control parameters

Exposure limit sources

UK – EH40 Workplace Exposure Limits (WEL).

Component	CAS #	Control Parameters
Graphite - inhalable dust	7782-42-5	10 mg/m ³ (TWA)
Graphite - respirable dust	7782-42-5	4 mg/m ³ (TWA)

Inhalable dust is the fraction of material that is available for deposition in the respiratory tract; respirable dust is the fraction that penetrates into the gas exchange region of the lung.

Biological occupational exposure limits

This product does not contain any hazardous materials with biological limits.

8.2 Exposure controls

Engineering measures

Handle in accordance with good industrial engineering/laboratory practices for hygiene and safety. Ensure eyewash stations and safety showers are close to the laboratory workstation. Ensure good general ventilation is present when handling the product.

Personal protective equipment



Eyes: Wear safety glasses with side-shields conforming to appropriate government standards such as NOISH (US) or EN166 (EU).

Skin: Handle with appropriate gloves and use proper glove removal technique to avoid skin contact. Dispose of gloves in accordance with applicable laws. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Clothing: Wear complete suit protecting against chemicals; the type of equipment should be appropriate for the concentration and amount of dangerous substance used.

Respirators: Where protection from nuisance dusts is needed, use type N95 (US) or type P1 (EN 143) dust masks or those approved under appropriate government standards such as NIOSH (US) or CEN (EU).

General hygiene measures

Wash thoroughly after handling. Wash contaminated clothing before reuse.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance	Black/grey powder
Odour	Odourless
Odour threshold	No data available
pH	No data available
Melting/freezing point	No data available
Boiling point/range	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability	No data available
Explosive limits	No data available
Vapour pressure	No data available
Vapour density	No data available

Bulk density	No data available
Solubility	No data available
Partition coefficient: <i>n</i>-octanol/water	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	No data available
Oxidizing properties	No data available

9.2 Other safety information

No data available.

SECTION 10: Stability and Reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under normal temperatures and pressures under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

No known hazardous decomposition products.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

No data available.

Skin corrosion/irritation

No data available.

Serious eye damage/eye irritation

May cause eye irritation.

Respiratory or skin sensitization

May cause irritation to skin and respiratory tract.

Germ cell mutagenicity

No data available.

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

No data available.

Specific target organ toxicity - single exposure

No data available.

Specific target organ toxicity - repeated exposure

No data available.

Aspiration hazard No data available. **Routes**

of exposure

Eye contact, ingestion, inhalation, skin contact.

Signs and Symptoms of Exposure

No data available.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12.1 Toxicity

No data available.

12.2 Persistence and degradability

No data available.

12.3 Bio accumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

No data available

SECTION 13: Disposal

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state and local environmental regulations and directives on waste and hazardous waste. Offer surplus material to a licensed professional waste disposal professional.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport

Non-hazardous for road, air and sea transport.

IATA: Not regulated as a hazardous material.

IMO: Not regulated as a hazardous material.

RID/ADR: Not regulated as a hazardous material.

SECTION 15: Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006, the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

No data available.

15.2 Chemical safety assessment

No chemical safety report/assessment was carried out for this product.

SECTION 16: Other Information

Warranty

This material is for research and development use only. The information provided here is based upon the available information from material suppliers but not warranted as complete and is provided only as a guide. Ceylon Graphene Technologies Pvt Ltd shall not be held responsible for any damage resulting from use or handling of this product.