



### **SAFETY DATA SHEET**

# **GRAPHENE POWDER**

This SDS is valid for all our products in powder form which includes doped graphene powder, Industrial grade graphene powder, composite grade graphene powder, Energy storage grade graphene powder.



APPEARANCE	Greyish black powder
ODOUR	None
SOLUBILITY IN WATER	Insoluble

PHYSICAL AND CHEMICAL PROPERTIES

#### TERRACARB PRIVATE LIMITED

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### HANDLING

- When handling, preventive measures usually used when handling chemical products should be employed; e.g. wearing protective eyewear and gloves.
- No eating, drinking or smoking during application.
- Wash hands before and at the end of the job.
- Avoid contact with skin and eyes, Seek medical attention if irritation presides.

## STORAGE CONDITIONS

- Keep container in a dry, cool, well-ventilated area.
- Keep container tightly closed and sealed until ready for use.
- Avoid all possible sources of ignition (spark or flame).
- Store away from strong oxidizing and reducing agents.

### **EXPOSURE CONTROL**

- Exposure limit values: 5 mg/m3 (Occupational Safety and Health Administration, USA)
- Hand protection: Handle with protecting gloves. Wash and dry hands after manipulation.
- Respiratory protection: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard, such as NIOSH (US) or EN 143 (EU).
- Eye protection: Wear safety glasses conforming to an approved standard, such as NIOSH (US) or EN 166 (EU).
- Skin protection: Wear protective clothing to prevent contact with skin. The type of clothing must depend on the level of exposure to the product
- Occupational exposure controls: Install and operate general and/or local exhaust ventilation systems of sufficient power to maintain airborne concentration below the defined or recommended limit. If possible, manipulate under fume hood to avoid exposure.

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### **ACCIDENTAL RELEASE MEASURES**

- Methods for clean-up: Collect spilled material using a vacuum with HEPA filter.

  Avoid formation of dust.
- Personal precautions: Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation. Prevent the formation of dust-air mixture.
- Environmental precautions: Keep spilt material away from drains and runoff, ground-water and soil.

### STABILITY AND REACTIVITY

- This product is stable under normal storage conditions.
- Conditions to avoid: Ignition source.
- Materials to avoid: Oxidizing and reducing agents.
- Hazardous decomposition products:
- Under fire conditions: carbon monoxide and carbon dioxide.

## **ECOLOGICAL INFORMATION**

• No known significant effects or critical hazards.

## HAZARD IDENTIFICATION

### Precautionary statement(s):

 Keep container tightly closed. Keep away from heat, sparks, open flames and hot surfaces. Sanding and grinding dusts may be harmful if inhaled.
 Prevent dust accumulation. Emits toxic fumes, when heated. Skin May be harmful if absorbed through skin.

#### OSHA/HCS Status:

• This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

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#### Classification of the substance or mixture:

COMBUSTIBLE DUSTS

#### Potential health Effects:

- Inhalation May be harmful if inhaled.
- Causes respiratory tract irritation.
- Skin May be harmful if absorbed through skin.
- Causes skin irritation.
- Eyes Causes eye irritation.
- Ingestion May be harmful if swallowed.

### TOXICOLOGICAL INFORMATION

This product contains engineered nanoparticles, which have structural features with at least one dimension of 100 nanometers or less.

- Irritant effect on skin: Skin contact with graphene powder may cause irritation.
- Irritant effect on the eye: Eye contact has shown irritation.
- Respiratory or skin sensitization: Graphene powder may cause skin sensitization.
- Inhalation: Inhalation can cause irritation.
- Ingestion: May be harmful if swallowed

### FIRST AID MEASURES

- Skin contact: Wash thoroughly with soap and water. Seek medical attention.
- Inhalation: Remove victim to fresh air. Restore and/or support breathing as needed. Seek medical attention.
- Ingestion: Call poison control centre. Never give anything by mouth to someone is unconscious or convulsing. Seek medical attention.
- Eye contact: Immediately flush eyes gently and thoroughly, including under the eyelids, with clean running water for 20 minutes.

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## FIRE-FIGHTING MEASURES

- Suitable extinguishing media: Water fog, carbon dioxide, dry chemical, foam.
- Decomposition products: Carbon monoxide, carbon dioxide and metal oxide.
- Special protective equipment for fire-fighters: Wear self-contained breathing apparatus if the fire is large.

### **DISPOSAL CONSIDERATIONS**

- The generation of waste, should be avoided or minimized whenever possible.
- Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.
- Disposal of this product, and any by-product, should at all times, comply with the requirements of environmental protection and waste disposal legislation and any national, regional and local authority requirements.

## **NOTICE:**

To the best of our knowledge, the information contained herein is accurate. However, neither the abovenamed supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

The information contained herein was not obtained from toxicology assays using our graphene but gathered from our technical knowledge resulting from bibliography and specialist practice. Our Technical Service is at your disposal for any additional advice you may require. Terracarb reserves the right to modify the composition of the products provided that they continue producing the characteristics described herein.

Future reservations regarding patents or third-party rights, should be taken into account.

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