

## **MATERIAL SAFETY DATA SHEET (MSDS)**

**Product Name: Carbon Conductive Ink**

**Product Series: Carbink-001**

### **1. Identification of substance**

Company: M/s. Techinstro

Plot No. - 463, Yadav Nagar

Nagpur, Maharashtra, India

Pin Code- 440026

Emergency Contact: +91(0) 8007799090

Emergency Contact Email: [info@techinstro.com](mailto:info@techinstro.com)

### **2. Hazard Identification**

2.1 Potential Acute Health Effects: Slightly hazardous in skin contact (irritant), eye contact (irritant), ingestion, or inhalation.

2.2 Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not known. TERATOGENIC EFFECTS: Not available.

2.3 DEVELOPMENTAL TOXICITY: Not available. This substance is harmful to the respiratory and cardiovascular systems. Repeated or prolonged exposure can damage target organs.

### **3. Composition and information on ingredients**

Description: Mixture of non-hazardous substances.

Ingredient: Carbon, <30-50% (weight)

CAS number 7782-42-5

### **4. First aid measures**

#### **4.1 Inhalation**

Remove the affected individual from exposure and supply fresh air. Apply Artificial respiration and other support as required. Consult a doctor if irritation of respiratory passages occurs.

#### **4.2 Skin contact**

Wash thoroughly with soap and water. Consult a doctor if irritation continues. Remove contaminated clothing and wash before re-use.

#### 4.3 Eye contact

Rinse with running water for 20 minutes. Consult a doctor if irritation continues.

#### 4.4 Indigestion

Rinse your mouth thoroughly. Consult a doctor if irritation continues.

#### 4.5 Most important symptoms and effects, both acute and Delayed

No further relevant information is available.

### 5. Firefighting measures

#### 5.1 Flash point

No data available.

#### 5.2 Autoignition temperature

No data available.

#### 5.3 Flammable limits

No data available.

#### 5.4 Special Firefighting Procedures

Wear full protective clothing. Wear a self-contained breathing apparatus.

#### 5.5 Extinguishing Media: Use water spray, foam, dry powder, or CO<sub>2</sub> to extinguish the fire.

#### 5.6 Unusual fire or explosion hazards

Not a fire hazard.

#### 5.7 Hazardous combustion products

During fire, this compound forms toxic gases (CO, CO<sub>2</sub>).

### 6. Accidental release measures

#### 6.1 Spill procedures

Mop up small spillages with washing-up liquid.

#### 6.2 Environmental protection

Avoid discharge in sewers or waterways.

#### 6.3 Person-related safety precautions

Wear protective equipment.

## 7. Handling and storage

### 7.1 Safe handling

Avoid contact with eyes, skin, and clothing. Wash hands thoroughly after handling. Do not inhale or ingest. Loosen closure cautiously before opening.

### 7.2 Storage requirements

Do not freeze.

Keep containers sealed. Store in a well-ventilated, cool, and dry place. Protect from direct sunlight.

## 8. Exposure controls and personal protection

Handle chemicals safely by following standard precautions. Wear protective glasses and protective work clothes. Keep away from food and drinks. Wash hands during breaks.

## 9. Physical and chemical properties

Form: Black-colored paste

Odor: A residual odor from polymer binders may be present.

pH value: Not determined.

The danger of explosion: The product is not explosive.

Self-ignition: The product is not self-igniting.

Melting, boiling, and flash points: Flashpoint 95°C

Ignition temperature: Not determined.

Vapor pressure: Not determined.

Viscosity: Brookfield 1,000 - 2,500 mPa.s (cP) at 20 r.p.m. at 25 °C.

Solvent: Water

Solids content: 30-50% (weight)

## 10. Stability and reactivity

### 10.1 Stability

Stable at average temperatures and pressures.

### 10.2 Hazardous reactions

Not applicable.

### 10.3 Materials to be avoided

Not applicable.

### 10.4 Decomposition

Carbon oxides are formed during fire.

#### 10.5 Conditions to avoid

Avoid excessive heat, flames, and other ignition sources.

### 11. Toxicological information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:

LD50 (oral, rat): >2000mg/kg (Carbon)

LC50 (inhalation, rat): Not available.

Chronic Effects on Humans: Causes damage to the following organs: upper respiratory tract. It may cause damage to the following organs: the cardiovascular system.

"Toxic Effects on Humans: This substance is slightly hazardous in skin contact (as an irritant), ingestion, or inhalation. It may cause irritation or discomfort.

**Special Remarks on Toxicity to Animals:** There is no information available on the toxicity of this substance to animals.

**Special Remarks on Chronic Effects on Humans:** No information is available on this substance's chronic effects on humans.

Special Comments on Other Toxic Effects on Humans: This substance may cause nuisance dust, which can irritate and cause discomfort."

#### Acute Potential Health Effects:

Skin: Causes skin irritation.

Eyes: Dust causes eye irritation.

Inhalation: This may be harmful if inhaled. Dust causes respiratory tract and mucous membrane irritation.

Ingestion: May be harmful if swallowed. It may cause gastrointestinal (digestive) tract irritation with nausea and vomiting.

**Chronic Potential Health Effects:** Inhalation of high concentrations of graphene dust over prolonged periods may cause pneumoconiosis. Symptoms can include cough, shortness of breath, and decreased pulmonary function. Preexisting pulmonary disorders such as emphysema may be aggravated by prolonged exposure to high concentrations of graphene dust. The toxicology of this substance has yet to be thoroughly investigated.

### 12. Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Hazardous short-term degradation products are not likely. Long-term degradation of products may occur.

**Toxicity of the Biodegradation Products:** The product and its degradation products are not toxic.

Special Comments on the Products of Biodegradation: Not available.

### **13. Disposal considerations**

Waste Disposal:

Waste must be disposed of by federal, state, and local environmental control regulations.

### **14. Transport information**

DOT Classification: Not a DOT-controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable

### **15. Regulatory information**

Graphene (Graphene, CAS no. 7782-42-5) is not listed as a hazardous material under US Federal regulations. It is not listed under the Clean Air Act, the Clean Water Act, SARA (section 302, section 311/312, or section 313), HAPS, or Carbon (CAS no. 7782-42-5), is listed on:

US: TCSA Canada: DSL EC: EINECS

This product has WHMIS (Canada) classification D2A

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### **16. Other information**

The information here is accurate as of the above date. However, no warranty, express or implied, is given. The client is responsible for ensuring its activities comply with the relevant laws.