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## SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

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### 1.1 Product identifiers

Product Name : ACS Material Graphene  
Brand : ACS Material LLC  
CAS-No. : 7782-42-5

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

Identified uses : Laboratory chemicals, Manufacturing of substances

### 1.3 Details of the supplier of the safety data sheet

Company : ACS MATERIAL LLC  
959 E Walnut St. Suite 100  
Pasadena, CA 91106  
USA  
Telephone : +1 (866)-227-0656  
Fax : +1 (781)-518-0284

### 1.4 Emergency telephone number

Emergency Phone #: +1 (866)-227-0656

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## SECTION 2: HAZARDS IDENTIFICATION

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### 2.1 Classification of the substance or mixture

Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008. This substance is not classified as dangerous according to Directive 67/548/EEC.

#### Label elements

The product does not need to be labelled in accordance with EC directives or respective national laws.

### 2.2 Other Hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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## 3.1 Substances

Substance name : ACS Material Graphene  
CAS-No : 7782-42-5  
Molecular weight : 12,01g/mole  
No components need to be disclosed according to the applicable regulations

## SECTION 4: FIRST AID MEASURES

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### 4.1 Description of first aid measures

#### General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

#### In case of skin contact

Flush eyes with water as a precaution.

#### If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

### 4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

### 4.3 Indication of any immediate medical attention and special treatment needed

No data available

## SECTION 5: FIREFIGHTING MEASURES

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### 5.1 Extinguishing media

#### Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

### 5.2 Special hazards arising from the substance or mixture

Carbon oxides.

### 5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

### 5.4 Further information

No data available

## SECTION 6: ACCIDENTAL RELEASE MEASURES

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- 6.1 Personal precautions, protective equipment and emergency procedures**  
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.  
For personal protection see section 8.
- 6.2 Environmental precautions**  
No special environmental precautions required.
- 6.3 Methods and materials for containment and cleaning up**  
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.
- 6.4 Reference to other sections**  
For disposal see section 13.

## SECTION 7: HANDLING AND STORAGE

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- 7.1 Precautions for safe handling**  
**Suitable extinguishing media**  
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection. For precautions see section 2.2.
- 7.2 Conditions for safe storage, including any incompatibilities**  
Keep container tightly closed in a dry and well-ventilated place.
- 7.3 Specific end use(s)**  
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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- 8.1 Control parameters**  
**Components with workplace control parameters**  
Contains no substances with occupational exposure limit values.
- 8.2 Exposure controls**  
**Appropriate engineering controls**  
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
- 8.3 Personal protective equipment**  
**Eye/face protection**  
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).  
**Skin protection**  
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal



technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

### Body Protection

Impervious clothing recommended. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

### Respiratory protection

For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

Do not let product enter drains.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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### 9.1 Information on basic physical and chemical properties

1) Appearance	Form: Solid, Powder Colour: Grey
2) Odour	odourless
3) Odour Threshold	No data available
4) pH	No data available
5) Melting point/freezing point	Melting point/range: 3,652- 3,697 °C
6) Initial boiling point and boiling range	No data available
7) Flash point	Not applicable
8) Evaporation rate	No data available
9) Flammability (solid, gas)	No data available
10) Upper/lower flammability or explosive limits	No data available
11) Vapour pressure	No data available
12) Vapour density	No data available
13) Relative density	No data available
14) Water solubility	No data available
15) Partition coefficient: n- octanol/water	No data available
16) Auto-ignition temperature	No data available
17) Decomposition temperature	No data available
18) Viscosity	No data available
19) Explosive properties	No data available
20) Oxidizing properties	No data available



## 9.2 Other safety information

No data available

## SECTION 10: STABILITY AND REACTIVITY

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### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable 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

Other decomposition products - No data available

In the event of fire: see section 5.

## SECTION 11: TOXICOLOGICAL INFORMATION

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### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - female - > 2.000 mg/kg

(OECD Test Guideline 423)

LC50 Inhalation - Rat - male and female - 4 h - 2.000 mg/m<sup>3</sup>

(OECD Test Guideline 403)

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

(OECD Test Guideline 404)

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

#### Respiratory or skin sensitisation

- Mouse

Did not cause sensitisation on laboratory animals.

(OECD Test Guideline 429)

**Germ cell mutagenicity**

in vitro assay  
S. typhimurium  
Result: negative

**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.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

Inhalation - May cause respiratory irritation.

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Additional Information**

Repeated dose toxicity - Rat - male - Feed - No observed adverse effect level - 813 mg/kg  
RTECS: Not available  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**SECTION 12: ECOLOGICAL INFORMATION**

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**12.1 Toxicity**

Toxicity to fish	semi-static test LC50 - Danio rerio (zebra fish) - > 100 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - > 100 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test EC50 - Pseudokirchneriella subcapitata - > 100 mg/l - 72 h (OECD Test Guideline 201)

**12.2 Persistence and degradability**

No data available



## 12.3 Bioaccumulative potential

No data available

## 12.4 Mobility in soil

No data available

## 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

## 12.6 Other adverse effects

No data available

## SECTION 13: DISPOSAL CONSIDERATIONS

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### 13.1 Waste treatment methods

#### Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

#### Contaminated packaging

Dispose of as unused product.

## SECTION 14: TRANSPORT INFORMATION

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### 14.1 DOT (US)

Not dangerous goods

### 14.2 IMDG

Not dangerous goods

### 14.3 IATA

Not dangerous goods

## SECTION 15: REGULATORY INFORMATION

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This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

#### SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

#### SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.



## SARA 311/312 Hazards

Acute Health Hazard

## 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out.

## SECTION 16: OTHER INFORMATION

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### HMIS Rating

Health hazard: 1

### Chronic Health Hazard:

Flammability: 0

Physical Hazard: 0

### NFPA Rating

Health hazard: 1

Fire Hazard: 0

Reactivity Hazard: 0

**Disclaimer:** ACS Material, LLC believes that the information in this Safety Data Sheet is accurate and represents the best and most current information available to us. ACS Material makes no representations or warranties either express or implied, regarding the suitability of the material for any purpose or the accuracy of the information contained within this document. Accordingly, ACS Material will not be responsible for damages resulting from use of or reliance upon this information.