

---

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

---

**1.1 Product identifiers**

Product Name : ACS Material Imidazole-modified Graphene Quantum Dots  
Brand : ACS Material LLC  
CAS-No. : 7440-44-0

**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, 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

---

**SECTION 2: HAZARDS IDENTIFICATION**

---

**2.1 Classification of the substance or mixture**

Not a hazardous substance or mixture.

**2.2 GHS Label elements, including precautionary statements**

Pictogram



Signal word Warning

Hazard statement(s)

H351 Suspected of causing cancer.

Precautionary statement(s)

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and



understood.

P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

### 2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Substance name : ACS Material Imidazole-modified Graphene Quantum Dots  
 CAS-No. : 7440-44-0  
 EC-No. : 231-153-3  
 Synonyms : graphene QDs  
 graphene-dots  
 GDs  
 GNP QDs

#### Hazardous ingredients

Components	Concentration	CAS No.
Imidazole-modified QDs	<=100%	7440-44-0

For the full text of the phrases mentioned in this Section, see Section 16.

**Hazardous impurities:** None known.

## SECTION 4: FIRST AID MEASURES

### 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

Wash off with soap and plenty of water. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

Do NOT induce vomiting. 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**

---

**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**

No data available.

**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**

---

**6.1 Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

For personal protection see section 8.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**6.3 Methods and materials for containment and cleaning up**

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

**6.4 Reference to other sections**

For disposal see section 13.

**SECTION 7: HANDLING AND STORAGE**

---

**7.1 Precautions for safe handling****Suitable extinguishing media**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

For precautions see section 2.2.

**7.2 Conditions for safe storage, including any incompatibilities**

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

**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**

---

**8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

**8.2 Exposure controls****Appropriate engineering controls**

Contains no substances with occupational exposure limit values.

**8.3 Personal protective equipment****Eye/face protection**

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.

**Full contact**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatri® (KCL 740 / Aldrich Z677272, Size M)

**Splash contact**

Material: Nitrile rubber

Minimum layer thickness: 0.11 mm

Break through time: 480 min

Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de,

test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

### Body Protection

Complete suit protecting against chemicals 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

Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### Control of environmental exposure

No special environmental precautions required.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1 Information on basic physical and chemical properties

1) Appearance	Form: powder/solution Colour: dark brown
2) Odour	odourless
3) Odour Threshold	No data available
4) pH	6.0 - 9 at 40 g/l at 25 °C (77 °F)
5) Melting point/freezing point	No data available
6) Initial boiling point and boiling range	No data available
7) Flash point	No data available
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	< 0.01 hPa (< 0.01 mmHg) at 20 °C (68 °F)
12) Vapour density	No data available
13) Relative density	0.250 - 0.600 g/cm <sup>3</sup>
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

Bulk density 250 - 550 kg/m<sup>3</sup> at 20 °C (68 °F)

## SECTION 10: STABILITY AND REACTIVITY

---

### 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

---

### 11.1 Information on toxicological effects

#### Acute toxicity

No data available.

Inhalation: No data available.

Dermal: No data available.

No data available.

#### Skin corrosion/irritation

No data available.

#### Serious eye damage/eye irritation

No data available.

#### Respiratory or skin sensitisation

No data available.

**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.

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

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**

No data available.

**Specific target organ toxicity - repeated exposure**

No data available.

**Aspiration hazard**

No data available.

**Additional Information**

RTECS: Not available.

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

**SECTION 12: ECOLOGICAL INFORMATION**

---

**12.1 Toxicity**

No data available.

**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**

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

**12.6 Other adverse effects**



No data available.

## SECTION 13: DISPOSAL CONSIDERATIONS

---

### 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. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

#### Contaminated packaging

Dispose of as unused product.

## SECTION 14: TRANSPORT INFORMATION

---

#### UN number

ADR/RID: no IMDG: no IATA: no

#### UN proper shipping name

ADR/RID: - IMDG: - IATA: -

#### Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

#### Packaging group

ADR/RID:- IMDG: - IATA: -

#### Environmental hazards

ADR/RID: No. IMDG: no IATA: no

#### Special precautions for user

No data available.

## SECTION 15: REGULATORY INFORMATION

---

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

#### Authorisations and/or restrictions on use

##### 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

No SARA Hazards



**Massachusetts Right To Know Components**

No components are subject to the Massachusetts Right to Know Act.

**Pennsylvania Right To Know Components**

graphene QDs

CAS-No.

Revision Date

7440-44-0

**New Jersey Right To Know Components**

graphene QDs

CAS-No.

Revision Date

7440-44-0

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**SECTION 16: OTHER INFORMATION**

---

**HMIS Classification**

Health hazard: 0

Chronic Health Hazard:

Flammability: 0

Physical Hazard: 0

**NFPA Rating**

Health hazard: 0

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.