SECTION 1: IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

1.1 Product identifiers

Product Name	:	ACS Material Blue Luminescent Graphene Quantum Dots
Product Number	:	GNQD0101, GNQD0111, GNQD0121, GNQD0131, GNQD0141, GNQD0151
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

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
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/ 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	:	Blue Luminescent 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.
Blue Luminescent Graphene Quantum Dots	<=0.1%	7440-44-0
H_2O	>99%	7732-18-5

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 dust formation. 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. Recommended storage temperature at 4°C. 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.

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: solution Colour: yellow
2)	Odour	Odorless
3)	Odour Threshold	No data available
4)	pH	No data available
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	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

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.

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: No data 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

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

	CAS-No.	Revision Date
Graphene QDs	7440-44-0	

New Jersey Right To Know Components

	CAS-No.	Revision Date
Graphene QDs	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 Rating

Health hazard: 0

Chronic Health Hazard:

Flammability: 0

Physical Hazard: 0

NFPA Rating

Health hazard: 0

Fire Hazard: 0

Reactivity Hazard: 0

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