

Safety Data Sheet

Section 1: Identification

1.1. Product identifiers

Product name: #1) MQDs-Bright Orange, #2) MQDs-Bright Red, #3) MQDs-Bright Green solution in water

Product numbers: MQDs-BO588, MQDs-BR653, MQDs-BG556, PureQDs-BO588, PureQDs-BR653, PureQDs-BG556

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

Identified uses: Scientific research and product development only. Not intended for human or animal diagnostic or therapeutic use.

1.3. Details of the supplier of the safety data sheet

Institution/Company:

SUNUM - SABANCI ÜNİVERSİTESİ NANOTEKNOLOJİ
ARAŞTIRMA VE UYGULAMA MERKEZİ
ADRES : ÜNİVERSİTE CAD. NO:27 ORHANLI TUZLA
34956 İSTANBUL / TÜRKİYE

Phone: +90 216 493 9000

1.4. Emergency telephone number

Emergency Phone: +90 216 493 9000 Extn. 9882

Section 2. Hazards identification

1.5. Classification of the substance or mixture in accordance with the local and national regulations as well as with Directive 1999/45/E.

GHS - Classification



Signal word: Danger

Hazard statements

H226 - Flammable liquid and vapor

H301 – Toxic if swallowed

H304 - May be fatal if swallowed and enters airways

H315 – Causes skin irritation

H319 – Causes serious eye irritation

H336 - May cause drowsiness or dizziness
H360 - May damage fertility or the unborn child
H373 – May cause damage to organs through prolonged or repeated exposure
H410 – Very toxic to aquatic life with long lasting effects
Precautionary statements
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground/bond container and receiving equipment.
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P260 - Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 - Wash skin thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 - IF exposed or concerned: Get medical advice/ attention.
P331 - Do NOT induce vomiting.
P332 + P313 - If skin irritation occurs: Get medical advice/ attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/ container to an approved waste disposal plant.

1.6. Hazards not otherwise classified (HNOC) or not covered by GHS
None

Section 3. Composition/Information on ingredients

3.1. Mixtures

Chemical Name	CAS-No.	Classification	Weight percent
Cadmium Selenide	1306-24-7	H301 – Toxic if swallowed H410 - Aquatic Acute 1	<=40
MQDs	None	-	<=60
Iron oxide	1317-61-9	None	Not applicable

Section 4: First-aid measures

4.1. Description of first aid measures

General advice: Immediately remove any clothing soiled by the product. Consult a doctor.

After inhalation: Supply fresh air. If required, provide artificial respiration. Consult a doctor.

After skin contact: Immediately rinse with water and wash skin with soap. Consult a doctor.

After eye contact Rinse opened eye for several minutes under running water. Consult a doctor.

After swallowing: Rinse mouth with water. Do not induce vomiting. Immediately call a doctor.

Inhalation: Move to a fresh air location. If not breathing, provide artificial respiration and call 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. Fire-fighting measures

5.1. Extinguishing with suitable media : Dry powder, foam, carbon dioxide (CO₂)

5.2. Protective special equipment: Wear self-contained breathing apparatus and personal protection equipment.

Section 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition.

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

Contain spillage and then with an electrically protected vacuum cleaner or by wet-brushing or absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust) and place in container for disposal according to local regulations.

Section 7. Handling and storage

7.1. Precautions for safe handling

Avoid eye and skin contact. Avoid inhalation of vapour or mist. Keep away from sources of

ignition. No smoking. Take measures to prevent the buildup of electrostatic charge. Keep respiratory protective device available.

7.2. Conditions for safe storage, including any incompatibilities

Storage: Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Recommended storage temperature 2-25 °C. Protect from heat and direct sunlight.

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

8.2. Exposure controls

Respiratory protection: Use respirators type P2(EN 143) and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU) and dust mask type N95.

Hand protection : The selected protective gloves have to satisfy the specification of EU Directive 89/686/EEC and the standard EN 374 derived from it. Handle with gloves.

Eye protection : Safety glasses with side-shields conforming to NIOSH (US) or EN166 (EU)

Skin and body protection : Choose body protection according to the amount and concentration of the dangerous substance at the workplace. Handle with gloves. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and standard EN 374 derived from it.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday

Section 9. Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance Form: Liquid

Color: green

Odour: Unpleasant

Odour threshold: No data available

pH : 7.2

Melting point: No data available

Boiling point : No data available

Flash point : °C No data available

Evaporation rate : No data available

Flammability (solid, gas) :No data available

Upper/lower flammability or

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explosive limits

Upper explosion limit: 7 Vol % (toluene)

Lower explosion limit: 1.2 Vol % (toluene)

Vapor pressure 29.1 hPa (21.8 mmHg) at 20 °C (toluene)

Vapour density No data available

Relative density 0.865 g/cm³

Solubility: Soluble in water

Auto-ignition temperature: 208 °C

Decomposition temperature: No data available

Viscosity: No data available

Explosive properties: No data available

Oxidizing properties: No data available

9.2 Other information

No data available

Section 10. Stability and reactivity

Stability: Stable under normal conditions.

Materials to avoid: heat

Hazardous decomposition: Selenium oxide, Hydrogen selenide, Cadmium oxide

Polymerization: none under normal processing

Hazardous reactions: hazardous polymerization does not occur

Section 11. Toxicological information

Information on toxicological effects

MQDs: No data available

Selenium compounds : 7 mg/kg (rat)

Fe₃O₄: none

Acute toxicity: No data available

Corrosivity: No data available

Sensitization : No data available

Repeated dose toxicity: Specific target organ toxicity - repeated exposure (Category 2)

Carcinogenicity :

IARC (International Agency for Research on Cancer) – 2A

NTP (National Toxicology Program) – R

EPA (Environmental Protection Agency) – B2

TLV (Threshold Limit Value established by ACGIH) - A3

OSHA-Ca (Occupational Safety & Health Administration) -Substance is not listed

Mutagenicity: No data available

Carcinogenic effects: none

Target organ effects: None under normal use conditions

Section 12. Ecotoxicity effects

Ecotoxicity effects: freshwater algae and water flea (daphnia magna)

Acute aquatic toxicity: Category 1

Mobility: No data available

Biodegradation: Biodegradable inherently

Bioaccumulation: No data available or none

Section 13. Disposal considerations

Dispose: Follow in accordance with local regulations. Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

Do not release into the sewage or environment.

Section 14. Transport information

Shipping, Packaging group - III,

UN number DOT: UN3288, UN3283 - class 6.1 - PG 2 - EHS - RQ - Toxic solid, inorganic, n.o.s., HI: all

Hazard class: 6.1

Section 15. Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture:
No data available

Chemical safety assessment: No data available

Section 16. Other information

Prepared by: SUNUM - SABANCI ÜNİVERSİTESİ NANOTEKNOLOJİ ARAŞTIRMA VE UYGULAMA MERKEZİ

ADRES : ÜNİVERSİTE CAD. NO:27 ORHANLI TUZLA 34956 İSTANBUL / TÜRKİYE

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References:

NationalInstituteForOccupationalSafetyandHealth(NIOSH),U.S.,2010:

<http://www.cdc.gov/niosh/topics/nanotech/>

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<http://www.cdc.gov/niosh/docs/2009-125/pdfs/2009-125.pdf>