

SAFETY DATA SHEET

Date Printed: 05/29/2020

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SECTION 1. IDENTIFICATION

Product Name: CdSeTe/ZnS Quantum Dots

Product Number: All applicable American Elements product codes, e.g. CST-ZNS-01-QD.720E , CST-ZNS-01-QD.760E , CST-ZNS-01-QD.860E , CST-ZNS-01-QD.880E , CST-ZNS-01-QD.840E , CST-ZNS-01-QD.780E , CST-ZNS-01-QD.700E , CST-ZNS-01-QD.820E

CAS #:

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
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Emergency telephone number:

+1 800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids(Category 2), H225

Acute toxicity, Oral(Category 4), H302

Acute toxicity, Inhalation(Category 3), H331

Skin corrosion(Category 1B), H314

Serious eye damage(Category 1), H318

Carcinogenicity(Category 1A), H350

Reproductive toxicity(Category 2), H361

Specific target organ toxicity -single exposure(Category 3), Central nervous system, H336

Specific target organ toxicity -repeated exposure(Category 2), H373

Specific target organ toxicity -repeated exposure, Oral(Category 2), Kidney, Bone, H373

Aspiration hazard(Category 1), H304

Acute aquatic toxicity(Category 1), H400

Chronic aquatic toxicity(Category 1), H410

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225

Highly flammable liquid and Vapor.

H302

Harmful if swallowed.

H304

May be fatal if swallowed and enters airways.

H314

Causes severe skin burns and eye damage.

H331

Toxic if inhaled.

H336

May cause drowsiness or dizziness.

H350

May cause cancer.

H361

Suspected of damaging fertility or the unborn child.

H373

May cause damage to organs through prolonged or repeated exposure.

H373

May cause damage to organs (Kidney, Bone) through prolonged or repeated exposure if swallowed.

H410

Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

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/ Vapors/ spray.

P264

Wash skin thoroughly after handling.

P270

Do not eat, drink or smoke when using this product.

P271

Use only outdoors or in a well-ventilated area.

P273

Avoid release to the environment.

P280

Wear protective gloves/ protective clothing/ eye protection/ face protection.

P301 + P310

IF SWALLOWED: Immediately call a POISON CENTER/doctor.

P301 + P330 + P331

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303 + P361 + P353

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P310

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.

P305 + P351 + P338 + P310

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

P308 + P313

IF exposed or concerned: Get medical advice/ attention.

P363

Wash contaminated clothing before reuse.

P370 + P378

In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

P391

Collect spillage.

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.

Hazards not otherwise classified (HNOC) or not covered by GHS-none

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Formula: CdSeTe/ZnS

Toluene

Cas number: 108-88-3

SECTION 4. FIRST AID MEASURES

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

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

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

Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

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

Special hazards arising from the substance or mixture

No data available

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

Use water spray to cool unopened containers.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear respiratory protection. Avoid breathing Vapors, mist or gas. Ensure adequate ventilation.

Remove all sources of ignition. Evacuate personnel to safe areas. Beware of Vapors accumulating to form explosive concentrations.

Vapors can accumulate in low areas.

For personal protection see section 8.

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.

Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Reference to other sections

For disposal see section 13.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

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

Use explosion-proof equipment.

Keep away from sources of ignition -No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.

Conditions for safe storage, including any incompatibilities

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.

Recommended storage temperature 2 -8 °C

Light sensitive.

Handle and store under inert gas.

Specific end use(s)

Apart from the uses mentioned in section 1 no other specific uses are stipulated

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). 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, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls.

If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance

Form: liquid

Odor

aromatic, solvent-like

Odor Threshold

No data available

pH

No data available

Melting point/freezing point

No data available

Initial boiling point and boiling range

100 -120 °C (212 -248 °F)
Flash point
9 °C (48 °F)
Evaporation rate
No data available
Flammability (solid, gas)
No data available
Upper/lower flammability or
Upper explosion limit: 7 %(V)
Vapor pressure
No data available
Vapor density
No data available
Relative density
0.86 g/cm³ at 20 °C (68 °F)
Water solubility
No data available
Partition coefficient: n-octanol/water
No data available
Auto-ignition temperature
No data available
Decomposition temperature
No data available
Viscosity
No data available
Explosive properties
No data available
Oxidizing properties
No data available
Other safety information
No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity
No data available
Chemical stability
Stable under recommended storage conditions.
Possibility of hazardous reactions
Vapors may form explosive mixture with air.
Conditions to avoid
Heat, flames and sparks.
Incompatible materials
Strong acids and oxidizing agents
Hazardous decomposition products
Hazardous decomposition products formed under fire conditions.-Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Oxides of phosphorus, Cadmium/cadmium oxides, Zinc/zinc oxides, Selenium/selenium oxides
Other decomposition products
No data available
Hazardous decomposition products formed under fire conditions.
-Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Oxides of phosphorus, Cadmium/cadmium oxides, Zinc/zinc oxides, Selenium/selenium oxides

In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

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

This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or

EPA classification. Chronic exposure to cadmium may cause lung and prostate cancer.

IARC:

1-Group 1: Carcinogenic to humans(Cadmium selenide)

3-Group 3: Not classifiable as to its carcinogenicity to humans(Cadmium selenide)

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:

OSHA specifically regulated carcinogen(Cadmium selenide)

Reproductive toxicity

No data available

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

Lung irritation, chest pain, pulmonary edema, Inhalation studies on toluene have demonstrated the development of inflammatory and ulcerous lesions of the penis, prepuce, and scrotum in animals.

Stomach-Irregularities-Based on Human Evidence

Stomach-Irregularities-Based on Human Evidence(Toluene)

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

No data available

Persistence and degradability

No data available
Bioaccumulative potential
No data available
Mobility in soil
No data available
Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable.
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

DOT (US)
UN number: 2924
Class: 3(8)
Packing group: II
Proper shipping name: Flammable liquids, corrosive, n.o.s.(Toluene)
Reportable Quantity(RQ): 1078 lbs
Poison Inhalation Hazard: No
IMDG
UN number: 2924
Class: 3(8)
Packing group: II
EMS-No: F-E, S-C
Proper shipping name: FLAMMABLE LIQUID, CORROSIVE, N.O.S.(Toluene)
IATA
UN number: 2924
Class: 3(8)
Packing group: II
Proper shipping name: Flammable liquid, corrosive, n.o.s.(Toluene)

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
The following components are subject to reporting levels established by SARA Title III, Section 313:
Toluene

CAS-No.
108-88-3
Revision Date
2007-07-01
Zinc sulphide
1314-98-3
2007-07-01
SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right To Know Components

Toluene
CAS-No.
108-88-3
Revision Date
2007-07-01
Aliphatic amine

-
1993-04-24
Pennsylvania Right To Know Components

Toluene
CAS-No.
108-88-3
Revision Date
2007-07-01
Zinc sulphide
1314-98-3
2007-07-01
Aliphatic carboxylic acid

-
Aliphatic amine

-
1993-04-24
Trioctylphosphine
4731-53-7
New Jersey Right To Know Components

Toluene
CAS-No.
108-88-3
Revision Date
2007-07-01
Zinc sulphide
1314-98-3
2007-07-01
Aliphatic carboxylic acid

-
Aliphatic amine

-
1993-04-24
Trioctylphosphine
4731-53-7
California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Toluene
CAS-No.

108-88-3
Revision Date
2009-02-01

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.