

SPI Supplies Division

Structure Probe, Inc.

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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: November 5, 2018

SPI Catalog #'s 02415-AB, 02416-AB

SPI-Chem™ Uranyl Zinc Acetate

Section 1.1: Identification

Chemical Name/Synonyms Uranyl Zinc Acetate; Zinc bis(acetate-O)dioxouranate

Product or Trade Name SPI-Chem™ Uranyl Zinc Acetate

CAS #'s 10138-94-0

EC # 233-390-8

Chemical Formula..... C₄H₆O₆U.Zn

Section 1.2: Relevant Uses/Restrictions

Electron dense stain for electron microscopy.

Section 1.3: Supplier of the Safety Data Sheet

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Section 1.4: Emergency telephone number

Emergencies

Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...

Worldwide phone: 1-(703)-741-5970

Toll-free phone: 1-(800)-424-9300 USA + Canada only

Section 2: Hazard Identification

2.1 Classification of the substance

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

Eye irritant (category 2A)

Acute toxicity (category 3) (if swallowed; if inhaled)

Acute toxicity (category 4) (in contact with skin)

2.2 Label elements

Pictogram



Signal Word: Danger

Hazard statements:

- H301 Toxic if swallowed
- H312 Harmful in contact with skin
- H319 Causes serious eye irritation
- H331 Toxic if inhaled

Precautionary statements:

- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray
- P264 Wash thoroughly after handling
- P270 Do not eat, drink or smoke when using this product
- 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/ doctor
- P302 + P362 IF ON SKIN: Wash with plenty of water
- P304 + P340 IF INHALED: Remove person to fresh air and keep in a position comfortable for breathing
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P311 + P309 Call a POISON CENTER/ doctor if exposed or if you feel unwell
- P321 Specific treatments – see on this label
- P330 Rinse mouth
- P337 + P313 If eye irritation persists: Get medical advice/ attention
- P362 Take off contaminated clothing and wash it before reuse
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed
- P405 Store locked up
- P501 Dispose of contents/ container in accordance with local/ regional/ national/ international regulations

2.3 Other Hazards: No further relevant information available.

Hazardous Material Information System USA

Health 3
Fire Hazard 0
Reactivity 0
Personal Protection

NFPA Rating (estimated)

Health 3
Flammability..... 0
Reactivity 0

Section 3: Composition**3.1 Substances:**

Uranyl Zinc Acetate CAS # 10138-94-3 EC # 233-390-8 ~100%

Section 4: First Aid Measures**4.1 Description of first aid measures:****Emergency overview:**

Highly toxic (USA). Very toxic (EU).
Dangerous for the environment.
Very toxic by inhalation and if swallowed.
Danger of cumulative effects.
Toxic to aquatic organisms; may cause long-term adverse effects in the aquatic environment.
Radioactive material.

Target organs: Liver, Kidneys.

General information:

Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident is indicated.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest, provide artificial respiration.

Inhalation:

After inhalation, supply fresh air or oxygen; call for doctor.
In case of unconsciousness, place patient stably in side position for transportation.

Skin Contact:

Immediately wash with water and soap and rinse thoroughly.

Eye Contact:

Rinse opened eye for several minutes under running water.
If symptoms persist, consult a doctor.

Ingestion:

After swallowing, do not induce vomiting; immediately call for medical help.

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

No further relevant information available.

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

No further relevant information available.

Section 5: Fire Fighting Measures**5.1 Extinguishing media:**

Water spray, carbon dioxide, dry chemical powder, or appropriate foam.

5.2 Special hazards arising from the substance or mixture:

Radioactive material.

5.3 Hazardous combustion products: Emits toxic fumes under fire conditions.

5.4 Advice for firefighters:

Special protective equipment and precautions for firefighters:

As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

Section 6: Accidental Release Measures

6.1 Personal precautions: Not required.

6.2 Environmental precautions: Dilute with plenty of water.

6.3 Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to Section 13.
Ensure adequate ventilation.

6.4 Reference to other sections:

See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
Prevent formation of aerosols.

Information about protection against explosions and fires: Keep respiratory protective device available.

7.2 Conditions for safe storage, including any incompatibilities:

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep receptacle tightly sealed.

7.3 Specific end uses:

Electron dense stain for electron microscopy.

This material is not being offered for clinical or diagnostic applications, agricultural uses or for human or animal consumption.

Section 8: Exposure Controls and Personal Protection

8.1 Control parameter and Personal Protection:

Workplace exposure limits: No information available.

Biological limit values: No information available.

8.2 Exposure controls:

8.2.1 Appropriate engineering controls:

Safety shower and eyewash must be readily available.
Use only in chemical fume hood.
Use with adequate ventilation.
Keep away from foodstuffs, beverages and feed.

8.2.2 Individual protection measures:

Wash hands before breaks and at the end of work.
Immediately remove all soiled and contaminated clothing.
Store protective clothing separately.
Avoid contact with the eyes.
Avoid contact with the skin.

Breathing equipment:

In case of brief exposure or low pollution, use respiratory filter device.
In case of longer exposure, use respiratory protective device that is independent of circulating air.

Protection of hands:

Protective gloves.
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests, no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material is on consideration of the penetration times, rates of diffusion, and the degradation.
Material of gloves: The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.
Penetration time of glove material: The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

Eye protection:

Tightly sealed goggles.

8.2.3 Environmental exposure controls: No further relevant information available.

Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance: Yellow, Crystalline

Odor: Characteristic

Odor threshold: Not determined

pH: Not determined

Melting point/Freezing point: Undetermined

Boiling point/Boiling point range: Undetermined

Flash Point: Not applicable

Evaporation rate: Not determined

Flammability (solid, gas): Non flammable

Upper/lower flammability or explosive limits: Not determined

Vapor Pressure: Not determined

Vapor density: Not determined

Relative density: Not determined

Solubility in/ Miscibility with water: Fully miscible

Partition coefficient (n-octanol/water): Not determined

Auto-ignition temperature: Not determined

Decomposition temperature: Not determined

Viscosity:

Dynamic: Not determined

Kinematic: Not determined

Explosive properties: No information available.

Oxidizing properties: No information available.

Organic solvents: 0.0%

VOC content: 0.0 g/l / 0.00 lbs./gl.

9.2 Other information: No further relevant information available.

Section 10: Stability and Reactivity

10.1 Reactivity: No further relevant information available.

10.2 Chemical Stability: No further relevant information available.

10.3 Possibility of Hazardous Reactions: No dangerous reactions known.

10.4 Conditions to avoid: No further relevant information available.

10.5 Incompatible materials: No further relevant information available.

10.6 Hazardous decomposition products: No decomposition if used according to specifications.

Section 11: Toxicological Information

Information on the likely routes of exposure:

11.1 Information on toxicological effects:

A. Acute toxicity: No information available.

B. Skin corrosion/irritation: No irritant effect.

C. Serious eye damage/irritation: Irritating effect.

D. Respiratory or skin sensitization: No sensitizing effect known.

E. Germ cell mutagenicity: No information available.

F. Carcinogenicity:

IARC (International Agency for Research on Cancer): Substance is not listed.

NTP (National Toxicology Program): Substance is not listed.

OSHA-CA (Occupational Safety Health Administration): Substance is not listed.

G. Reproductive toxicity: No information available.

H. STOT-single exposure: No information available.

I.. STOT-repeated exposure: No information available.

J. Aspiration hazard: No information available.

Section 12: Ecological Information

12.1 Toxicity:

Aquatic toxicity: No further relevant information available.

12.2 Persistence and degradability:

No further relevant information available.

12.3 Bio-accumulative potential:

No further relevant information available.

12.4 Mobility in soil:

No further relevant information available.

12.5 Results of PBT and vPvB assessment:

PBT: Not applicable.

vPvB: Not applicable.

12.6 Other adverse effects:

No further relevant information available.

Section 13: Disposal Considerations

13.1 Waste treatment methods:

Recommendation:

Must not be disposed of together with household garbage.

Do not allow product to reach sewage.

Uncleaned packagings:

Recommendation:

Disposal must be made according to official regulations.

Recommended cleansing agent:

Water, if necessary with cleansing agents.

Section 14: Transport Information

DOT:

UN Number:

UN2910

Proper shipping name: Radioactive material, excepted package-limited quantity of material
Class: 7 Radioactive material
Packing Group: II

IATA:

UN Number: UN2910
Proper shipping name: RADIOACTIVE MATERIAL, EXCEPTED PACKAGE-LIMITED QUANTITY OF MATERIAL
Class: 7 Radioactive material
Packing Group: II

IMDG:

UN Number: UN2910
Proper shipping name: RADIOACTIVE MATERIAL, EXCEPTED PACKAGE-LIMITED QUANTITY OF MATERIAL
Class: 7 Radioactive material
Packing Group: II

Environmental hazards: Not applicable

Marine pollutant: No

Special precautions for user: Warning: Radioactive material

Storage Category: A

Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: Not applicable

IMDG:

Limited quantities (LQ): 0
Excepted quantities (EQ): Code E0
. Not permitted as Excepted Quantity

UN "Model Regulation": UN2910, Radioactive material, excepted package-limited quantity of material, 7, II

Section 15: Regulatory Information

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

U.S. Government Regulations:

SARA 355 (Extremely Hazardous Substances): This substance is not listed.

SARA 313 (Specific Toxic Chemical Listings): This substance is not listed.

TSCA (Toxic Substances Control Act): This substance is listed.

California Prop. 65:

Chemicals known to cause cancer: This substance is not listed.
Chemicals known to cause reproductive toxicity for females: This substance is not listed.
Chemicals known to cause reproductive toxicity for males: This substance is not listed.

Chemicals known to cause developmental toxicity: This substance is not listed.

Carcinogenic categories:

EPA (Environmental Protection Agency): This substance is not listed.

ACGIH TLV (Threshold Limit Value): This substance is not listed.

NIOSH-Ca (National Institute for Occupational Safety and Health): This substance is not listed.

OSHA-CA (Occupational Safety & Health Administration): This substance is not listed.

15.2 Chemical Safety Assessment: A chemical safety assessment has not been carried out.

Date of Preparation: 05 November 2018

Abbreviations and acronyms

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

CMRG: Chemical Manufacturer's Recommended Guidelines

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

AIHA: American Industrial Hygiene Association

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulative and Toxicological

vPvB: very Persistent and very Bio-accumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety Health

ATE: Acute Toxicity Estimates

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

STEL: Short Term Exposure Limit

CEIL: Ceiling

TSCA: Toxic Substances Control Act (USA)

DSL: Domestic Substances List (Canada)

PICCS: Philippine Inventory of Chemicals and Chemical Substances

ENCS: Existing and New Chemical Substances (Japan)

AICS: Australian Inventory of Chemical Substances

IECSC: Inventory of Existing Chemical Substances in China

KECL: Korea Existing Chemicals List

Section 16: Other Information

Disclaimer of Liability:

Caution! Do not use SPI Supplies products or materials in applications involving implantation within the body; direct or indirect contact with the blood pathway; contact with bone, tissue, tissue fluid, or blood; or prolonged contact with mucous membranes. Products offered by SPI Supplies are not designed or manufactured for use in

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