Section 1.1: Identification

Chemical Name/Synonyms ....... Uranyl acetate dehydrate; Bis (acetate-O)dioxouranium dihydrate

Product or Trade Name ............. SPI-Chem™ Uranyl Acetate (Depleted Uranium)

CAS #'s ........................................... 6159-44-0

Chemical Formula...................... C4H6O6U·2H2O

Section 1.2: Relevant Uses/Restrictions

Laboratory chemical for use as a stain.

Section 1.3: Supplier of the Safety Data Sheet

SPI Supplies Division
Structure Probe, Inc.
206 Garfield Ave., West Chester, PA 19380-4512 USA
Phone: 1-(610)-436-5400 Fax: 1-(610)-436-5755
sales@2spi.com
http://www.2spi.com
Manufacturer's CAGE: 1P573

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)
   Acute toxicity, Oral (Category 2)
   Acute toxicity, Inhalation (Category 2)
   Specific target organ toxicity – repeated exposure (Category 2)
   Acute aquatic toxicity (Category 2)
   Chronic aquatic toxicity (Category 2)
2.2 Label elements

Pictogram

Signal Word: Danger

Hazard statements:
- H300 Fatal if swallowed.
- H330 Fatal if inhaled.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:
- 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.
- P284 Wear respiratory protection.
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
- P304 + P340+ P310 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
- P320 Specific treatment is urgent (see supplemental first aid instructions on this label).
- P330 Rinse mouth.
- P391 Collect spillage.
- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other Hazards: Radioactive.

Hazardous Material Information System USA

Health ......................... 3*
Fire Hazard .................... 0
Reactivity ...................... 0
Personal Protection .......
*Chronic health hazard

NFPA Rating (estimated)
Health ......................... 4
Flammability .................. 0
Reactivity ...................... 0
Section 3: Composition

3.1 Substances:
   Formula: C₄H₆O₆U·2H₂O
   Molecular Weight: 424.15
   CAS-No.: 6159-44-0
   EC-No.: 208-767-5
   Index-No.: 092-002-00-3

   Component Classification Concentration
   Bis(acetato-O)dioxouranium dehydrate
   Acute Toxicity 2; STOT RE 2
   Aquatic Acute 2; Aquatic Chronic 2

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.
   Take victim immediately to hospital.
   Consult a physician.

   In Case of Eye Contact:
   Flush eyes with water as a precaution.

   If Swallowed:
   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: Fire Fighting Measures

5.1 Extinguishing media:
   Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2 Special hazards arising from the substance or mixture:
   Carbon oxides, Uranium oxides.
5.3 Hazardous combustion products:
Carbon oxides, Uranium oxides.

5.4 Advice for firefighters:
Wear self-contained breathing apparatus for fire-fighting if necessary.

5.5 Special protective equipment and precautions for firefighters:
No further relevant information available.

**Section 6: Accidental Release Measures**

6.1 Personal precautions:
- Wear respiratory protection.
- Avoid dust formation.
- Avoid breathing vapors, mist, or gas.
- Ensure adequate ventilation.

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:
- Pick up and arrange disposal without creating dust.
- Sweep up and shovel.
- Keep in suitable, closed containers for disposal.

6.4 Reference to other sections:
- Refer to Section 13 for disposal information.

**Section 7: Handling and Storage**

7.1 Precautions for safe handling:
- Avoid contact with skin and eyes.
- Avoid formation of dust and aerosols.
- Provide appropriate exhaust ventilation at places where dust is formed.
- For precautions see Section 2.2.

7.2 Conditions for safe storage, including any incompatibilities:
- Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end uses:
- Laboratory chemical for use as a stain.

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: Uranyl acetate dehydrate CAS # 6159-44-0
**ACGIH Threshold Limit Values (TLV):**
- TWA / 0.2 mg/m³ USA  
- Confirmed human carcinogen

**ACGIH Threshold Limit Values (TLV):**
- STEL / 0.6 mg/m³ USA  
- Confirmed human carcinogen

**OSHA Table Z-1 Limits for Air Contaminants:**
- TWA / 0.05 mg/m³

**OSHA Table Z-1 Limits for Air Contaminants – 1910.1000:**
- TWA / 0.05 ppm

**NIOSH Recommended Exposure Limits (REL):**
- TWA / 0.05 mg/m³ USA  
- Potential Occupational Carcinogen
  See Appendix A

**Biological limit values:** No data available.

### 8.2 Exposure controls:

#### 8.2.1 Appropriate engineering controls:
Avoid contact with skin, eyes, and clothing.  
Wash hands before breaks and immediately after handling the product.

#### 8.2.2 Individual protection measures:

**Eye / face protection:**
- Face shield and safety glasses.  
- 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.  
- Glove material for full contact:  
  - Material: Nitrile rubber  
  - Minimum layer thickness: 0.11 mm  
  - Break through time: 480 min  
  - Material tested: Dermatril® (KCL 710 / Aldrich Z677272, Size M)
  
- Glove material for splash contact:  
  - Material: Nitrile rubber  
  - Minimum layer thickness: 0.11 mm  
  - Break through time: 480 min  
  - Material tested: Dermatril® (KCL 710 / 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.  
- 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 particle
respirator type N100 (US) or P3 (EN 143) 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).

8.2.3 Environmental exposure controls:
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

9.1 Information on basic physical and chemical properties:
Appearance:
- Form: crystalline
- Color: yellow
Odor: no data available
Odor threshold: no data available
pH: no data available
Melting point/Freezing point: no data available
Boiling point/Boiling point range: no data available
Flash Point: no data available
Evaporation rate: no data available
Flammability (solid, gas): no data available
Upper/lower flammability or explosive limits: no data available
Vapor Pressure: no data available
Vapor density: no data available
Relative density: 2.890 g/cm³
Solubility: no data available
Partition coefficient (n-octanol/water): no data available
Auto-ignition temperature: no data available
Decomposition temperature: 275 °C (527 °F)
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

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

Information on the likely routes of exposure:

11.1 Information on toxicological effects:
A. Acute toxicity:
   LD50 Oral / Rat 204 mg/kg
   Remarks:
   Behavioral: Tremor.
   Skin and Appendages: Other: Hair

   LD50 Dermal: no data available

   LD50 Subcutaneous / Rat 8.300 mg/kg
   Remarks:
   Behavioral: Tremor.
   Skin and Appendages: Other: Hair

B. Skin corrosion/irritation: No data available.

C. Serious eye damage/irritation: No data available.

D. Respiratory or skin sensitization: No data available.

E. Germ cell mutagenicity: No data available.

F. Carcinogenicity:
Contains a radioactive isotope which may produce cancer and genetic mutation.

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.
G. Reproductive toxicity: No data available.

H. STOT-single exposure: No data available.

I. STOT-repeated exposure: May cause damage to organs through prolonged or repeated exposure.

J. Aspiration hazard: No data available.

Additional Information:

RTECS: No available.

Conjunctivitis, Blood disorders, Symptoms may be delayed.
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 Bio-accumulative 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:
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.
No further relevant information 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 after burner and scrubber.

Contaminated packaging: Dispose of as unused product.

Section 14: Transport Information

DOT (US)
UN number: 2910
Proper shipping name: Radioactive material, excepted package-limited quantity of material n.o.s. (Bis(acetato-O)dioxouranium dihydrate)

Hazard Class: 7
Packing Group: None
Hazard Label: None
Reportable Quantity (RQ): 100 lbs
Marine pollutant: No
Poison Inhalation Hazard: No

**IATA**  
UN number: 2910  
Proper shipping name: Radioactive material, excepted package-limited quantity of material n.o.s. (Bis(acetato-O)dioxouranium dihydrate)  
Hazard Class: 7  
Packing Group: None

**IMDG**  
UN number: 2910  
EMS-No: F-A, S-A  
Proper shipping name: RADIOACTIVE MATERIAL, EXCEPTED PACKAGE-LIMITED QUANTITY OF MATERIAL N.O.S.(Bis(acetato-O)dioxouranium dihydrate)  
Hazard Class: 7  
Packing Group: None  
Marine pollutant: Marine pollutant

### Section 15: Regulatory Information

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

**U.S. Government Regulations:**

**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:**  
Acute Health Hazard, Chronic Health Hazard.

- **Massachusetts Right To Know Components:**  
  Bis(acetate-O)dioxouranium dehydrate CAS # 6159-44-0  
  Revision Date: 1993-04-24

- **Pennsylvania Right To Know Components:**  
  Bis(acetate-O)dioxouranium dehydrate CAS 3 6159-44-0  
  Revision Date: 1993-4-24

- **New Jersey Right To Know Components:**  
  Bis(acetate-O)dioxouranium dehydrate CAS 3 6159-44-0  
  Revision Date: 1993-4-24

- **California Prop. 65 Components:**  
  This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

**15.2 Chemical Safety Assessment:** A Chemical Safety Assessment has not been carried out.

Date of Preparation: 18 March 2019.

**Abbreviations and acronyms**  
IMDG: International Maritime Code for Dangerous Goods
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