

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

Safety Data Sheet

Date Effective: March 20, 2019

SPI Catalog # 02624-AB SPI-Chem™ Uranyl Acetate
(Depleted Uranium)

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.

For R&D purposes only.

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: $C_4H_6O_6U \cdot 2H_2O$
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.
For R&D purposes only.

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

Nutritional and Gross Metabolic: Changes in: Body temperature decrease.

LD50 Dermal: no data available

LD50 Subcutaneous / Rat 8.300 mg/kg

Remarks:

Behavioral: Tremor.

Skin and Appendages: Other: Hair

Nutritional and Gross Metabolic: Changes in: Body temperature decrease.

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: 20 March 2019.

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 implantation in the human body or in contact with internal body fluids or tissues. SPI Supplies will not provide to customers making devices for such applications any notice, certification, or information necessary for such medical device use required by US FDA (Food and Drug Administration) regulation or any other statute. SPI Supplies and Structure Probe, Inc. make no representation, promise, express warranty or implied warranty concerning the suitability of these materials for use in implantation in the human body or in contact with internal body tissues of fluids.

The information and recommendations set forth above are taken from sources believed to be accurate as of the date hereof, however SPI Supplies and Structure Probe, Inc. make no warranty with respect to the accuracy of the information or the suitability of the recommendations, and assume no liability to any user thereof. The information contained in this sheet does not constitute a hazard assessment and should not be used in place of the user's own assessment of work place risks as required by other health and safety legislation. Be aware of the Structure Probe, Inc. Copyright Policy. Structure Probe, Inc. grants a nonexclusive license to make unlimited copies of this safety sheet for internal use only. Quite obviously, this information would pertain only to this material when purchased from SPI Supplies as product from other sources, with other ingredients and impurity

levels could have substantially different properties.