

Safety Data Sheet

Product No. 19481 Uranyl Acetate, Dihydrate

Issue Date (06-25-14)

Review Date (04-03-15)

Section 1: Product and Company Identification

Product Name: Uranyl Acetate, Dihydrate

Synonym: Bis (acetato) dioxouranium, Diacetatodioxouranium Uranium acetate, Uranium oxyacetate, Uranyl acetate, Uranyl (2+) acetate

Company Name

Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477

Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)

Chemtrec Emergency Number 1-800-424-9300 24 hrs. a day.

Section 2: Hazard Identification

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

GHS Pictograms:



Toxic



Health hazard



Environ Damaging

GHS Categories:

GHS06: Toxic

GHS08: Health Hazard

GHS09: Environ Damaging

Acute toxicity, Oral (Category 2), H300

Acute toxicity, Inhalation (Category 2), H330

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

Acute aquatic toxicity (Category 2), H401

Chronic aquatic toxicity (Category 2), H411

Signal Word: DANGER

Hazard statement(s):

H300 + H330 Fatal if swallowed or if inhaled

H373 May cause damage to organs through prolonged or repeated exposure.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s):

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	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310	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.

Hazards not otherwise classified (HNOC) or not covered by GHS: Radioactive.**Health Effects:**

NFPA Hazard Rating: Health: 4; Fire: 0; Reactivity: 0

HMIS® Hazard Rating: Health: 3; Fire: 0; Reactivity: 0

(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)

Results of PBT and vPvB assessment: Not available as chemical safety assessment not required/not conducted.

PBT: ND

vPvB: ND

Emergency overview:

Appearance: Crystalline, yellow color

Immediate effects: Immediately call a POISON CENTER or doctor/ physician.

Potential health effects

Primary Routes of entry: Inhalation, ingestion, eye and skin contact.

Signs and Symptoms of Overexposure: The most important known symptoms and effects are described in Section 2

Eyes: ND

Skin: ND

Ingestion: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
May cause damage to organs through prolonged or repeated exposure.

Inhalation: Immediately call a POISON CENTER or doctor/ physician. May cause damage to organs through prolonged or repeated exposure.

Chronic Exposure: ND

Chemical Listed As Carcinogen Or Potential Carcinogen: Contains a radioactive isotope which may produce cancer and genetic mutation.

See Toxicological Information (Section 11)

Potential environmental effects

See Ecological Information (Section 12)

Section 3: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)	%	OSHA PEL mg/m³	ACGIH TLV mg/m³	NTP Carcinogen	IARC Carcinogen	OSHA regulated Carcinogen
Bis(acetato-O)dioxouranium dihydrate (6159-44-0) EC-No. : 208-767-5 Index-No. : 092-002-00-3 Acute Tox. 2; STOT RE 2; Aquatic Acute 2; Aquatic Chronic 2; H300 + H330, H373, H411	~100	0.05	0.2	No	No	No

Section 4: First Aid Measures

If accidental overexposure is suspected

General advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

Eye(s) Contact: Flush eyes with water as a precaution

Skin Contact: Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician

Inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

Ingestion: Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Note to physician

Treatment: ND

Medical Conditions generally Aggravated by Exposure: ND

Section 5: Fire Fighting Measures

Flash Point: Not applicable.

Flammable Limits: Product is not flammable.

Auto-ignition point: ND

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

Special Fire Fighting Procedures: Wear self-contained breathing apparatus for fire-fighting if necessary.

Unusual Fire and Explosion Hazards: Decomposition temperature 275 °C (527 °F).

Explosive properties: Product does not present an explosion hazard.

Hazardous combustion products: Carbon oxides, Uranium oxides.

DOT Class: Toxic

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. 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. Evacuate personnel to safe areas. Avoid breathing dust.

Methods and materials for containment and cleaning up: Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

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.

Waste Disposal Methods: Must not be disposed together with household garbage. Do not allow product to reach sewage system. Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage

Precautions to be taken in Handling and Storage: Avoid contact with skin and eyes. Avoid breathing vapors, mist or gas. Wear respiratory protection. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed. Keep container tightly closed in a dry and well-ventilated place. Store in metal can supplied with product.

Storage temperature: Room temperature.

Storage Pressure: NA

Section 8: Exposure Controls / Personal Protection

Components with workplace control parameters:

Component CAS-No. Value Control parameters Basis: Bis(acetato-O)dioxouranium dihydrate

6159-44-0 TWA 0.2 mg/m³ USA. ACGIH Threshold Limit Values (TLV):

Remarks Confirmed human carcinogen.

TWA 0.05 mg/m³ USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants: TWA 0.05 ppm

USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

STEL 0.6 mg/m³ USA. ACGIH Threshold Limit Values (TLV):

Confirmed human carcinogen.

TWA 0.05 mg/m³ USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

TWA 0.05 mg/m³ USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

TWA 0.05 mg/m³ USA. NIOSH Recommended Exposure Limits:

Potential Occupational Carcinogen.

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

Engineering Controls

Ventilation required: Use in chemical fume hood with adequate ventilation

Personal Protection Equipment

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type 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).

Protective gloves: 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.

Skin protection: Full contact Material: Nitrile rubber, Minimum layer thickness: 0.11 mm, Break through time: 480 min Material tested: Dermatril® nitrile gloves

Splash contact: Material: Nitrile rubber, Minimum layer thickness: 0.11 mm, Break through time: 480 min

Material tested: Dermatril® nitrile gloves using 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.

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.

Eye 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).

Additional clothing and/or equipment: ND

Exposure Guidelines

See Composition/Information on Ingredients (Section 3)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Crystalline powder. Color: Yellow.

Odor (threshold): ND

Specific Gravity (H₂O=1): 2.890 g/cm³

Relative Density: 2.890g/cm³

Vapor Pressure (mm Hg): ND

Vapor Density (air=1): ND

Percent Volatile by volume: ND

Decomposition temperature: 275 °C (527 °F) -

Evaporation Rate (butyl acetate=1): ND

Boiling Point: ND

Melting point: 110 °C

pH: ND

Solubility in Water: 77g/l

Formula: C₄H₆O₆U • 2H₂O

Molecular Weight: 424.15 g/mol

Section 10: Stability and Reactivity

Stability: Stable under recommended storage conditions.

Conditions to Avoid: Strong Sunlight.

Materials to Avoid (Incompatibility): Strong oxidizing agents.

Hazardous Decomposition Products: In the event of fire: Carbon oxides, Uranium oxides

Hazardous Polymerization: ND

Section 11: Toxicological Information

Results of component toxicity test performed: 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.

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.

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: 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.

Reproductive toxicity: No data available

Specific target organ toxicity - single exposure: No data available

Specific target organ toxicity - repeated exposure: May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard: No data available.

Additional Information: RTECS: Not 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.

Human experience: ND

This product **does not** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information

Ecological Information:

Toxicity: Toxic to aquatic life with long lasting effects

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.

Chemical Fate Information: ND

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: None.

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information

US DOT Information: Proper shipping name: Radioactive material, excepted package-limited quantity of material.

Hazard Class: 7

Packaging group: None

UN Number: UN2910

Limitations: Hazard Label: 49 CFR 173.421; LABEL: UN2910 Radioactive material, excepted package-limited quantity of material.

PIH (Poison inhalation hazard): Not a PIH

IATA: Proper shipping name: Radioactive material, excepted package-limited quantity of material

Hazard Class: 7

Packing group: None

UN Number: UN2910

Limitations: Hazard Label: 49 CFR 173.421; LABEL: UN2910 Radioactive material, excepted Package-limited quantity of material.

Further information: For large quantities, Reportable Quantity (RQ): 100 lbs.

Proper shipping name: Toxic solid, inorganic, n.o.s. (Bis(acetato-O)dioxouranium dihydrate)

Hazard Class: 6.1

Packing group: II

UN number: UN3288

PIH (Poison inhalation hazard): Not a PIH

Marine Pollutant: No

Canadian TDG: ND

Section 15: Regulatory Information

United States Federal Regulations

MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.

SARA: Section 311/312 Hazards: Acute Health Hazard, Chronic Health Hazard

SARA Title III: Section 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Section 313: 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.

RCRA: Not listed.

TSCA: Substance is listed.

CERCLA: RQ as Uranyl acetate (anhydride form, CAS # 541-09-3): 100 lbs. (45.4 Kg)

RTECS Number: Uranyl acetate (anhydride form, CAS # 541-09-3): YR3675000

RTECS Number: Uranyl acetate, dihydrate: YR3600000

State Regulations

California Proposition 65: This product is or contains chemical(s) known to the state of California to cause cancer. Radionuclides: cancer --- July 1, 1989 Uranium or Uranyl Acetate are currently not listed on Proposition 65 list. Uranium contains naturally occurring radionuclides found in the environment. No information is available on the acute (short-term) noncancer effects of the radionuclides in humans. Animal studies have reported inflammatory reactions in the nasal passages and kidney damage from acute inhalation exposure to uranium.

International Regulations

Canada WHMIS: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR. DSL: Yes; NDSL: No

Europe EINECS Numbers:

Section 16: Other Information

Label Information:

European Risk and Safety Phrases: Indication of Danger: Very toxic. Dangerous for the environment.

R: 26/28 33 51/53 Risk Statements: 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.

S: 20/21 45 61 Safety Statements: When using, do not eat, drink, or smoke. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Avoid release to the environment. Refer to special instructions/safety data sheets.

European symbols needed: Symbol of Danger: T+N

Canadian WHMIS Symbols: CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

Abbreviations used in this document

NE= Not established

NA= Not applicable

NIF= No Information Found

ND= No Data

Disclaimer

Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.

SDS Form 0013F1V4