

Material Safety Data Sheet

Product No. 665 (CHEM-177) Uranyl Acetate Dihydrate, Reagent

Issue Date (12/24/10)

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: H.M.S. Beagle, 180 English Landing Drive, Suites #110-120, Parkville, MO 64152

Domestic Phone 816-587-9998 (Mon-Tue. 10:00AM to 7:00PM CST; Thu-Fri 10:00AM to 8:00PM CST; Sat. 10:00AM to 7:00PM CST; Sun. 12:00PM to 5:00 PM CST)

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

Section 2: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No) %

OSHA PEL mg/m ³	ACGIH TLV mg/m ³	NTP	IARC	OSHA regulated
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*Uranyl Acetate, Dihydrate (6159-44-0)	99.9-100	0.05 (U)	NIF	NIF	NIF	NIF
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*Made from Depleted Uranium

Section 3: Hazard Identification

Emergency overview

Appearance: Solid, yellow crystals or powder

Immediate effects: Highly Toxic, Conjunctivitis, Blood effects. Symptoms may be delayed. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential health effects

Primary Routes of entry: Inhalation, skin absorption, ingestion.

Signs and Symptoms of Overexposure: Conjunctivitis. Blood effects. Symptoms may be delayed. To the best of our knowledge, the chemical physicals, and toxicological properties have not been thoroughly investigated.

Eyes: May cause eye irritation.

Skin: May cause skin irritation. May be harmful if absorbed through the skin.

Ingestion: May be harmful if swallowed. Target organs: Kidneys, Liver, Lungs.

Inhalation: May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Chronic Exposure: Carcinogen. Contains a radioactive isotope which may produce cancer or genetic mutation.

Chemical Listed As Carcinogen Or Potential Carcinogen: Yes (Radionuclides)

See Toxicological Information (Section 11)

Potential environmental effects

See Ecological Information (Section 12)

Section 4: First Aid Measures

If accidental overexposure is suspected

Eye(s) Contact: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Skin Contact: In case of contact, immediately wash skin with soap and copious amounts of water.

Inhalation: If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Ingestion: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Note to physician

Treatment: NIF

Medical Conditions generally Aggravated by Exposure: NIF

Section 5: Fire Fighting Measures

Flash Point: NA

Flammable Limits: NA

Auto-ignition point: NA

Fire Extinguishing Media: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual Fire and Explosion Hazards: Emits toxic fumes under fire conditions.

Hazardous combustion products: NIF

DOT Class: 7, Radioactive material, excepted package-limited quantity of material. (Made from depleted Uranium)

Section 6: Accidental Release Measures

Steps to be Taken in Case Material is Released or Spilled: Handle as a radioactive spill. Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Methods for cleaning up: Sweep-up, place in container and hold for waste disposal. Avoid raising dust. Ventilate area and

wash spill site after material pickup is complete.

Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage

Precautions to be Taken in Handling and Storage: User exposure: Avoid inhalation. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure.

Storage temperature: Keep tightly closed. Store in a cool dry place.

Storage Pressure: NA

Section 8: Exposure Controls / Personal Protection

Engineering Controls

Ventilation required: Use only in a chemical fume hood. Use with adequate ventilation.

Personal Protection Equipment

Respiratory protection: Government approved respirator.

Protective gloves: Compatible chemical-resistant gloves

Skin protection: Suitable clothing.

Eye protection: Chemical safety goggles.

Additional clothing and/or equipment: Safety shower and eye bath.

Exposure Guidelines

See Composition/Information on Ingredients (Section2)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Yellow crystals. Solid

Odor (threshold): NA

Specific Gravity (H₂O=1): 2.89 g/cm³

Vapor Pressure (mm Hg): NA

Vapor Density (air=1): NA

Percent Volatile by volume: NA

Evaporation Rate (butyl acetate=1): NA

Boiling Point: NA

Freezing point / melting point: 110 °C

Decomposition temperature: 275 °C

pH: NA

Solubility in Water: 10% in H₂O, 20 °C soluble incomplete.

Molecular Weight: 424.15 AMU

Section 10: Stability and Reactivity

Stability: Stable

Conditions to Avoid: Protect from moisture

Materials to Avoid (Incompatibility): Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxides, Uranium oxides.

Hazardous Polymerization: Will not occur.

Section 11: Toxicological Information

Results of component toxicity test performed: Intraperitoneal, Mouse LD50: 24 mg/Kg. Oral, Mouse LD50: 242 mg/Kg. Oral, Rat LD50: 204 mg/Kg

USA MSHA Standard-air TWA: 0.2 mg (U)/m³

Chronic Exposure: Contains a radioactive isotope which may produce cancer and genetic mutation.

Human experience: ND

This product **does** contain compounds listed by NTP or IARC or regulated by OSHA as a carcinogen. (Radionuclides)

Section 12: Ecological Information

Ecological Information: ND

Chemical Fate Information: ND

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: Contact a licensed professional waste disposal service to dispose of this material. Dispose of spilled material as radioactive waste. Consult local, state and federal regulations on disposal of radioactive waste. Observe all federal, state and local environmental regulations.

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: None

PIH (Poison inhalation hazard): Not PIH

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

Hazard Class: 7

Packing group: None

UN Number: UN2910

Marine Pollutant: No

Canadian TDG: NIF

Section 15: Regulatory Information

United States Federal Regulations

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

SARA: 302,304, 313: No

SARA Title III: No

RCRA: NIF

TSCA: 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)

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: Highly Toxic (USA), Very Toxic (EU), Dangerous for the environment.

European Risk and Safety Phrases: 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: T+, N

US Statements: Radioactive material. Target organ(s): Liver. Kidneys.

Canadian WHMIS Symbols: NIF

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

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

*additional chronic hazards present.

NFPA Hazard Rating: Health: 3; Fire: 0; Reactivity: 0

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

Abbreviations used in this document

NE= Not established

NA= Not applicable

NIF= No Information Found

ND= No Data

Disclaimer

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