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Manufacturer's CAGE: 1P573

Safety Data Sheet

Date Effective: February 18, 2015

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

Section 1: Identification

Chemical Name/Synonyms..... Uranyl Acetate dihydrate

Chemical family..... radioactive material

Emergencies
Contacting CHEMTREC:

24 Hour Emergency Use Only #'s...
Worldwide phone: 1-(703)-527-3887
Worldwide FAX: 1-(703)-741-6090
Toll-free phone: 1-(800)-424-9300 USA only

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

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

Chemical Formula..... $C_4H_6O_6U$

US Hazard Classification
Indication of Danger: Highly Toxic. Dangerous for the environment.

Radioactive. 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.

Target Organs: Kidneys, Liver, Lungs

Hazardous Material Information System USA
- Health..... 3
- Fire Hazard..... 0
- Reactivity..... 0
- Personal Protection.....

NFPA Rating (estimated)
- Health..... 3
- Flammability..... 0
- Reactivity..... 0

GHS Classification

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)

GHS Label Elements

Pictogram

Signal Word Danger

Hazard Statements:

H301: Toxic if swallowed
H312: Harmful in contact with skin
H331: Toxic if inhaled
H350: May cause cancer
H373: May cause damage to organs though prolonged or repeated exposure
H401: Toxic to aquatic life
H413: May cause long lasting harmful effects to aquatic life

Precautionary statements:

P260: Do not breathe dust/fume/gas/mist/vapors/spray
P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P273: Avoid release to the environment
P284: Wear respiratory protection
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician

Section 2: Composition

Component Name	CAS #	Percent	EINECS/ELINCS
Uranyl acetate dihydrate	6159-44-0	~100	208-767-5

Section 3: Hazard Identification

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, Lungs

Potential Health Effects

Eye: Absorption of soluble uranium compounds thorough eye tissue is reported.

Skin: No information found.

Ingestion: Toxic by ingestion

Inhalation: Moderate hazard on inhalation. Coughing, sneezing & breathing difficulty may occur.

Chronic: Damage to Kidneys, Liver and Lungs may occur after continued exposure.

Section 4: First Aid Measures

Eyes: In case of eye contact, flush eyes with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower lids. Seek medical attention.

Skin: In case of skin contact, wash immediately with plenty of soap and water.

Ingestion: If person is conscious, wash out mouth with water. Seek medical attention.

Inhalation: If inhaled, remove to fresh air. If breathing becomes difficult, seek medical attention.

Section 5: Fire Fighting Measures

General Information:
Emits toxic fumes under fire conditions. As in any fire, wear self-contained breathing apparatus pressure-demand (MSHA/NIOSH approved or equivalent) and full protective gear.

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

Section 6: Accidental Release Measures

General Information:
Handle as a radioactive spill.

Spills/Leaks:
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves. Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7: Handling and Storage

Handling:
Avoid inhalation and contact with eyes, skin and clothing. Avoid prolonged or repeated exposure.

Storage:

Store in cool, dry place in tightly closed container.

Section 8: Exposure Controls and Personal Protection

Engineering Controls:
Safety shower and eye bath must be readily available. Use only in a chemical fume hood. Use with adequate ventilation.

Personal Protective Equipment

Eyes: Chemical safety goggles

Skin: Use chemical resistant gloves.

Clothing: Protective clothing such as long sleeves or a lab coat should be worn.

Respirators:
A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Exposure Limits:
USA MSHA Standard – air: TWA 0.2 mg(U)/m^3
US OSHA. PEL: 8h twa 0.05 mg(U)/m^3

Section 9: Physical and Chemical Properties

Boiling Point: n/a
Decomposition temperature: 275°C
Freezing/Melting Point: 110°C
Autoignition Temperature: n/a
Flash Point: n/a
Explosion Limits
Lower: n/a
Upper: n/a
Solubility in water: 10% @ 20°C
Specific Gravity/Density: 2.89 g/cm^3
Molecular Formula: $C_4H_6O_6U{\cdot}2H_2O$
Molecular Weight: 424.15

Section 10: Stability and Reactivity

Chemical Stability: Stable

Conditions to Avoid: Protect from moisture.

Incompatibility with Other Materials: Oxidizing agents

Hazardous Decomposition of Products: Carbon monoxide, Carbon dioxide, Uranium oxides.

Hazardous Polymerization: Will not occur

Section 11: Toxicological Information

RTECS#: YR3600000

CAS#: 6159-44-0

LD_{50}/LC_{50} Information:

Oral, rat	LD50	204 mg/kg	
Subcutaneous, rat	LD50	8300 ug/kg	
Oral, mouse		LD50	242 mg/kg
Subcutaneous, mouse		LD50	20400 ug/kg

Carcinogenicity: Contains a radioactive isotope which may produce cancer.

OSHA: PEL: 8 H TWA 0.05 mg(U)/m^3
USA MSHA Standard: air TWA 0.2 mg(U)/m^3

Teratogenicity: Chronic exposure may lead to teratogenic effects.

Reproductive Effects: Chronic exposure may lead to reproductive effects.

Neurotoxicity: n/a

Mutagenicity: Chronic exposure may lead to mutagenic effects.

Section 12: Ecological Information

No data available.

Toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

Section 13: Disposal Considerations

Contact a licensed professional waste disposal service to dispose of this material. Dispose of spilled material as radioactive waste. Consult local, state, and federal regulation on the disposal of radioactive waste. Observe all federal, state, and local environmental regulations.

Section 14: Transport Information

Proper Shipping Name: Radioactive material, excepted package-limited quantity of material.

US DOT Hazard Class:

UN#: 2910
Hazard Class: 7
Packing Group: None
Hazard Label: None
PIH: Not PIH

IATA (for international shipments)

Proper Shipping Name: Radioactive material, excepted package, limited quantity of material
IATA UN Number: 2910
Hazard Class: 7

Section 15: Regulatory Information

United States:

Indication of Danger: Highly Toxic (USA) Very Toxic (EU)

TSCA

This material is listed on the TSCA inventory

Health & Safety Reporting List

n/a

Chemical Test Rules

n/a

Section 12b:

n/a

TSCA Significant New Use Rule:

n/a

SARA: Not listed

OSHA:

PEL: 8 H TWA 0.05 mg(U)/m_3

State (Individual states in the USA)

Listed on Massachusetts, New Jersey, and Pennsylvania Right-to-Know Lists.

California Prop. 65:

This material is considered a carcinogen under California Prop. 65.

European/International Regulations:

European Labeling in Accordance with EC Directives

Hazard Symbols: R – T+ - N

Risk Phrases:

R26 Very toxic by inhalation
R28 Very toxic if swallowed
R33 Danger of cumulative effects
R51 Toxic to aquatic organisms
R53 May cause long-term adverse effects in the aquatic environment

Safety Phrases:

S20 When using do not smoke
S21 Do not breathe dust
S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
S61 Avoid release to the environment. Refer to special instructions/Safety data sheets.

Canada

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**.**

WHMIS

This material has a WHMIS classification of D2A.

DSL/NDSL

DSL: yes

NDSL: no

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.

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