



Health	2
Fire	0
Reactivity	0
Personal Protection	X

Material Safety Data Sheet

Uranyl nitrate hexahydrate MSDS

Section 1: Chemical Product and Company Identification

Product Name: Uranyl nitrate hexahydrate

Catalog Codes:

CAS#: 13520-83-7

RTECS: YR3850000

TSCA: TSCA 8(b) inventory: No products were found.

CI#: Not available.

Synonym: Uranyl Nitrate Hydrate; Uranyl Dinitrate Hydrate; Uranium Oxynitrate; Uranyl Dinitrate hexahydrate; Dinitratodioxouranium hexahydrate; Uranium, bis(nitrato-O) dioxo-, hexahydrate; Uranium dinitratodioxo-, hexahydrate

Chemical Name: Uranium Nitrate Hexahydrate

Chemical Formula: UO₂(NO₃)₂·6H₂O

Contact Information:

Sciencelab.com, Inc.

14025 Smith Rd.

Houston, Texas 77396

US Sales: **1-800-901-7247**

International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:

1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Uranyl nitrate hexahydrate	13520-83-7	100

Toxicological Data on Ingredients: Uranyl nitrate hexahydrate LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:

Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Prolonged exposure may result in skin burns and ulcerations. Over-exposure by inhalation may cause respiratory irritation.

Potential Chronic Health Effects:

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, lungs, liver, bone marrow. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Cold water may be used. Get medical attention. Seek medical attention in case of eye contact with a radioactive material.

Skin Contact:

In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:

Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention in case of skin contact with a radioactive material.

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation:

Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention in case of inhalation of a radioactive material.

Ingestion:

Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion:

Hazardous decomposition products include UO₂, UO₃, U₃O₈, NO_x (thermal, alpha, beta, gamma radiation, uranium daughters (decay)).

Fire Hazards in Presence of Various Substances: shocks

Explosion Hazards in Presence of Various Substances:

Risks of explosion of the product in presence of static discharge: Not available. Explosive in presence of shocks, of heat.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards:

This material is an oxidizer. It may enhance combustion of other materials. It may detonate is subjected to pressure of friction or shock. Ether solutions in sunlight may explode.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:

Radioactive material. Oxidizing material. Stop leak if without risk. Do not attempt recovery actions unless for rescue purposes. Do not touch damaged container or spilled material. Do not clean-up or dispose except under supervision of a specialist. Avoid contact with a combustible material (wood, paper, oil, clothing...). Keep substance damp using water spray. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage**Precautions:**

Keep away from heat. Keep away from sources of ignition. Keep away from combustible material.. Do not breathe dust. Take precautionary measures against electrostatic discharges. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as reducing agents, organic materials, metals.

Storage:

Keep container tightly closed. Keep container in a cool, well-ventilated area. Separate from acids, alkalies, reducing agents and combustibles. See NFPA 43A, Code for the Storage of Liquid and Solid Oxidizers.

Section 8: Exposure Controls/Personal Protection**Engineering Controls:**

Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:

Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Personal Protection in Case of a Large Spill:

Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:

TWA: 0.2 (mg(U)/m) from OSHA (PEL) [United States](construction) TWA: 0.05 (mg(U)/m) from OSHA (PEL) [United States] (general industry) TWA: 0.2 STEL: 0.6 (mg(U)/m) [United Kingdom (UK)] TWA: 0.2 (mg(U)/m) [Australia] Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Deliquescent crystals solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 502.13 g/mole

Color: Yellow.

pH (1% soln/water): Not available.

Boiling Point: 118°C (244.4°F)

Melting Point: 60.2°C (140.4°F)

Critical Temperature: Not available.

Specific Gravity: 2.807 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, acetone.

Solubility:

Easily soluble in cold water, hot water, methanol, acetone. Soluble in mineral acids, alkalies, oxalates. Very soluble in acetic acid. Solubility in water: 8 g/l of water @ 14 deg. C; 33 g/l of water @ 100 deg. C

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials

Incompatibility with various substances: Reactive with reducing agents, organic materials, metals.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:

This material is an oxidizer. It may enhance combustion of other materials. It emits radioactive and toxic (NOx) fumes when heated to decomposition. It is also incompatible with cellulose, diethyl ether (ether solutions) and organic solvents.

Special Remarks on Corrosivity: When dissolved in water, a weak solution of nitric acid forms. Water solutions are acidic and can corrode metals.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:

LD50: Not available. LC50: Not available.

Chronic Effects on Humans: May cause damage to the following organs: blood, kidneys, lungs, liver, bone marrow.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals:

Lowest Published Lethal Dose: LDL [Dog] - Route: Oral; Dose: 12 mg/kg LDL[Cat] - Route: Oral; Dose: 238 mg/kg Lethal Dose/Conc. 50% kill: LD50[Rat] - Route: Intraperitoneal; Dose: 135 mg/kg LD50[Chicken] - Route: Subcutaneous; Dose: 299 mg/kg

Special Remarks on Chronic Effects on Humans:

It is a suspect carcinogen, mutagen, teratogen due to its radioactive characteristic. May cause cancer. May affect genetic material (mutagenic). May cause adverse reproductive effects.

Special Remarks on other Toxic Effects on Humans:

It is a radioactive material (low level radioactivity) Acute/Chronic Potential Health Effects: Skin: Causes skin irritation and possible ulceration. Eyes: Causes eye irritation and possible conjunctivitis. Risk of serious injury possible. Inhalation: Causes

irritation of the respiratory and mucous membranes. It is slightly corrosive to the respiratory (mucous) membranes. Symptoms may include coughing fits, sneezing, difficulty breathing, burning sensation, acute arterial lesions, and pulmonary edema. It is transferred from the lungs of animals quite slowly. A suspect carcinogen. Chronic exposure by inhalation may cause lung cancer, and kidney damage. Ingestion: Causes gastrointestinal tract irritation. Symptoms may include salivation, burning sensation in the stomach, cramps, nausea, vomiting, weakness, dizziness, diarrhea, convulsions and state of shock possible. Being radioactive, this compound is carcinogenic at any site of contamination on the body. Acute or chronic exposure may cause liver and kidney damage, and blood/bone marrow changes. Chronic exposure may also affect metabolism (weight loss). Additional Data Concerning Uranyl Nitrate: Uranium is a highly toxic element on an acute basis. The levels for soluble compounds are based on the chemical toxicity while the permissible body level for insoluble compounds is based on radioactivity.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:

Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification:

CLASS 7: Radioactive material. CLASS 5.1: Oxidizing material.

Identification: : Uranyl nitrate, solid UNNA: 2981 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:

Connecticut hazardous material survey.: Uranyl nitrate hexahydrate Illinois chemical safety act: Uranyl nitrate(CAS no. 101102-06-4) New York release reporting list: Uranyl nitrate (CAS no. 101102-06-4) Rhode Island RTK hazardous substances: Uranyl nitrate(CAS no. 101102-06-4) Pennsylvania RTK: Uranyl nitrate(CAS no. 101102-06-4) Massachusetts RTK: Uranyl nitrate(CAS no. 101102-06-4) Massachusetts spill list: Uranyl nitrate(CAS no. 101102-06-4) New Jersey: Uranyl nitrate hexahydrate New Jersey spill list: Uranyl nitrate(CAS no. 101102-06-4) Louisiana spill reporting: Uranyl nitrate(CAS no. 101102-06-4) California Director's List of Hazardous Substances: Uranyl nitrate hexahydrate CERCLA: Hazardous substances.: Uranyl nitrate: 100 lbs. (45.36 kg)

Other Regulations:

OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). On inventory lists of China, and Philippines.

Other Classifications:

WHMIS (Canada): CLASS C: Oxidizing material.

DSCL (EEC):

R8- Contact with combustible material may cause fire. R36/38- Irritating to eyes and skin. S2- Keep out of the reach of children. S46- If swallowed, seek medical advice immediately and show this container or label.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: x

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 3

Specific hazard:

Protective Equipment:

Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

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