

Distributor: SPI Supplies / Structure Probe Inc.
206 Garfield Avenue
West Chester, PA 19380
Phone: 610-436-5400; 1-800-242-4774
Fax: 610-436-5755
Email: sales@2spi.com
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Uranyl Nitrate Hexahydrate SDS

SECTION 1: IDENTIFICATION

Product Identifier: Uranyl Nitrate Hexahydrate

Synonyms: Uranyl(VI) nitrate hexahydrate; uranyl nitrate hexahydrate; bis(nitrato)dioxouranium(VI) hexahydrate

CAS Number: 13520-83-7

EC Number: 233-266-3

Formula: $\text{UO}_2(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$

Molecular Weight: 502.13 g/mol

Recommended use: Laboratory chemical; manufacture of substances

Restrictions on use: For professional use only

Supplier

International Bio-Analytical Industries, Inc.
3495 N. Dixie Hwy., Unit 8
Boca Raton, FL 33431

Emergency telephone:

INFOTRAC (24 hr)

USA & Canada: 1-800-535-5053

International: 1-352-323-3500

SECTION 2: HAZARD(S) IDENTIFICATION

GHS Classification (OSHA HazCom 2012):

Oxidizing Solid, Category 2 (H272)

Acute Toxicity (Oral), Category 2 (H300)

Acute Toxicity (Inhalation), Category 2 (H330)

Specific Target Organ Toxicity – Repeated Exposure, Category 2 (H373)

Hazardous to the Aquatic Environment, Acute Category 2 (H401)

Hazardous to the Aquatic Environment, Chronic Category 2 (H411)

Hazards Not Otherwise Classified (HNOC):

Radioactive material (uranium compound)

Label Elements:

Pictogram



Signal word: Danger

Hazard statements:

H272 May intensify fire; oxidizer.

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 statements:

P210 Keep away from heat.

P220 Keep away from clothing and other combustible materials.

P260 Do not breathe dust or mist.

P270 Do not eat, drink, or smoke when using this product.

P273 Avoid release to the environment.

P280 Wear protective gloves, protective clothing, eye and face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or physician.

P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P330 Rinse mouth.
P391 Collect spillage.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal:

P501 Dispose of contents/container in accordance with local, state, and federal regulations.

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

Molecular Formula: H₁₂N₂O₁₄U
Bis(nitrato-O)dioxouranium hexahydrate
Concentration: ≥ 99%
Ox. Sol. 2; Acute Tox. 2;
STOT RE 2; Aquatic Acute 2;
Aquatic Chronic 2; H272,
H300 + H330, H373, H411-

SECTION 4: FIRST-AID MEASURES

General advice: Seek immediate medical attention. Show this SDS to medical personnel.
Inhalation: Remove to fresh air immediately. If breathing is difficult, administer oxygen by trained personnel. Seek medical attention.
Skin contact: Remove contaminated clothing. Wash skin thoroughly with soap and water. Seek medical attention.
Eye contact: Rinse cautiously with water for at least 15 minutes. Remove contact lenses if present. Seek medical attention.
Ingestion: Rinse mouth. Do NOT induce vomiting. Seek immediate medical attention.
Most important symptoms/effects: Toxic if inhaled or swallowed. Kidney damage, lung damage, and delayed systemic effects are possible.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable extinguishing media: Dry chemical, dry sand, alcohol-resistant foam. Use a water spray to cool containers.
Specific hazards: Strong oxidizer. May intensify fire. Thermal decomposition releases nitrogen oxides and uranium oxides.
Protective equipment: Self-contained breathing apparatus and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions: Evacuate area. Avoid dust formation. Use respiratory protection.
Environmental precautions: Prevent release to drains, soil, or waterways.
Cleanup methods: Carefully collect material using non-sparking tools. Place in a sealed container for disposal.

SECTION 7: HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Avoid dust formation. Use local exhaust ventilation.
Storage: Store tightly closed in a cool, dry, well-ventilated area. Keep away from combustible materials. Hygroscopic.
Specific end uses: No other uses are stipulated apart from the uses mentioned in section 1.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits
OSHA PEL (Uranium compounds): 0.05 mg/m³ (TWA)
ACGIH TLV: 0.2 mg/m³ (TWA)
NIOSH REL: 0.05 mg/m³ (TWA)
Personal Protective Equipment
Eye protection: Safety goggles and a face shield
Skin protection: Chemical-resistant gloves (nitrile) and protective clothing
Full contact
Material: Nitrile rubber.
Minimum layer thickness: 0.11 mm.
Break-through time: 480 min.
Material tested: Dermatrill® (KCL 740 / Aldrich Z677272, Size M).

Splash contact

Material: Nitrile rubber.

Minimum layer thickness: 0.11 mm.

Break-through time: 480 min.

Material tested: Dermatrill® (KCL 740 / 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 that 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 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: NIOSH-approved full-face respirator with P100 filter or supplied-air respirator where airborne exposure is possible.

At any detectable concentration: Any self-contained breathing apparatus with a full facepiece operated in a pressure-demand or other positive-pressure mode.

Any supplied-air respirator with a full facepiece operated in a pressure-demand or other positive-pressure mode or other positive-pressure mode with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.

Escape – any air-purifying, full-facepiece respirator with a high-efficiency particulate filter.

Any appropriate escape-type, self-contained breathing apparatus.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance Form: Yellow crystalline solid

Odor: Odorless

Relative density: 2.890 g/cm³.

Solubility: Soluble in water

Decomposition temperature: ~275 °C

Oxidizing properties: Strong oxidizer

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Strong oxidizer

Chemical stability: Stable under recommended conditions

Incompatible materials: Combustibles, reducing agents, organic materials

Hazardous decomposition products: Nitrogen oxides, uranium oxides

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity:

Oral LD₅₀ (rat): ~204 mg/kg

Inhalation: Fatal

Target organs: Kidneys, lungs, liver, blood

Carcinogenicity: Radioactive uranium compound; cancer risk associated with radiation exposure

Additional Information

RTECS: YR3850000

Conjunctivitis, blood disorders, and symptoms may be delayed. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

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Kidney injury may occur, liver injury may occur, damage to the lungs, blood disorders, and symptoms may be delayed.

SECTION 12: ECOLOGICAL INFORMATION

Toxic to aquatic life with long-lasting effects.

Avoid environmental release.

Other adverse effects: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose of as radioactive hazardous waste in accordance with EPA, NRC, and state regulations.

Do NOT incinerate.

Contaminated packaging must be disposed of as hazardous waste.

SECTION 14: TRANSPORT INFORMATION

DOT / IATA / IMDG:

Radioactive material — shipment subject to radioactive material regulations.

Proper Shipping Name:

Hazard Class:

UN/ID Number: To be determined on a case-by-case basis.

Special Information:

Packing Group:

The classification of substances with multiple hazards must be determined following the criteria presented in the regulations mentioned above. Due to the various quantities and combinations of materials being shipped at one time, the information above must be determined based on the characteristics of the specific shipment.

SECTION 15: REGULATORY INFORMATION

OSHA HazCom: Hazardous

SARA 311/312: Acute Health, Chronic Health, Reactive

State Right-to-Know: Listed (MA, PA, NJ)

SECTION 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute toxicity.

Acute aquatic toxicity.

Chronic aquatic toxicity.

H272 May intensify fire, oxidizer.

H300 Fatal if swallowed.

H300 + H330 Fatal if swallowed or if inhaled.

H330 Fatal if inhaled.

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

H401 Toxic to aquatic life.

H411 Toxic to aquatic life with long-lasting effects.

HMIS Rating

Health hazard: 3

Chronic Health Hazard: *

Flammability: 0

Physical Hazard 3

NFPA Rating

Health hazard: 3

Fire Hazard: 0

Reactivity Hazard: 3

Special hazard. I: OX

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