SECTION-1: Identification of the substance / mixture and the company / undertaking

Catalogue Number	CS-O-47913
Product Name	Uranium (1000 mg/L(PPM)
CAS No.	7440-61-1
Category	Reagents
Synonyms	Uranium
Brand	Clearsynth Labs Ltd.
Identified uses	Laboratory Chemicals
Uses advised against	Not available
Company	Clearsynth Labs Ltd. Mumbai, India
Emergency Phone #	+91-22-245045900
REACH No.	Not available

SECTION 2: Hazards identification

Disclaimer: This is sample MSDS. Please email **sales@clearsynth.com** for more details.

2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Not available

2.2 Label Elements

Signal Word: Warning

Hazard Statement(s)

Code	Statement
H300	Not available
H330	Not available
H373	Not available
H413	Not available

H411	Toxic to aquatic life with long lasting effects.
H250	Not available
H350	Not available
H370	Not available
H372	Not available

Precautionary Statement(s)

Code	Statement
P260	Not available
P264	Wash hands thoroughly after handling.
P270	Not available
P271	Use only outdoors or in a well-ventilated area.
P273	Not available
P284	Not available
P301+P316	Not available
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P316	Not available
P319	Get medical help if you feel unwell.
P320	Not available
P321	Specific treatment (see … on this label).
P330	Not available
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio
P391	Not available
P203	Not available
P210	Not available
P222	Not available
P231	Not available
P233	Not available

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P302+P335+P334	Not available
P308+P316	Not available
P318	Not available
P370+P378	Not available

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Uranium (1000 mg/L(PPM)
CAS Number : 7440-61-1
Molecular Formula : U
Molecular Weight : 238.03
Parent Chemical : -
Synonyms : Uranium
Concentration : Not available

SECTION 4: First aid measures

Not available

SECTION 5: Firefighting measures

Not available

SECTION 6: Accidental release measures

Not available

SECTION-7: Handling and storage

Not available

SECTION 8: Exposure controls / personal protection

Not available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Test	Result
Appearance	No data available
IR spectrum	No data available
pH	No data available
Solubility	No data available

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

SECTION 10: Stability and reactivity

Not available

SECTION 11: Toxicological information

11.1 Information on toxicological effects

- Acute toxicity: For more Human Toxicity Excerpts (Complete) data for URANIUM, ELEMENTAL (12 total), please visit the HSDB record page. /LABORATORY ANIMALS: Neurotoxicity/ ... the bioaccumulation of uranium in male rats after exposure to repeated depleted uranium dioxide inhalation (30 min inhalation at 197 mg/cu m, 4 days a wk for 3 wks) has been studied, together with the behavioral effects. The uranium concentrations in the brain 1 day after the end of the exposure period varied as follows: olfactory bulb>hippocampus>frontal cortex>cerebellum, subsequently decreasing rapidly. The spontaneous locomotion activity of exposed rats was increased 1 day post exposure and the spatial working memory was less efficient 6 days post exposure, compared with control rats. These data suggest that depleted uranium is able to enter the brain after exposure to repeated inhalation, producing behavioral changes. /Depleted uranium dioxide/
- Skin corrosion/irritation: No data available.
- Serious eye damage/eye irritation: No data available.
- Respiratory or skin sensitization: No data available.
- Germ cell mutagenicity: Uranium is combined with either bicarbonate or a plasma protein in the blood but once in the kidney, it is released and forms complexes with phosphate ligands and proteins in the tubular wall, causing damage. Uranium may also inhibit both sodium transport-dependent and independent ATP utilization and mitochondrial oxidative phosphorylation in the renal proximal tubule. Uranium causes respiratory diseases by damaging alveolar epithelium type II cells in the lungs. Uranium induces c-Jun N-terminal kinase (JNK) and p38 mitogen-activated protein kinase (p38 MAPK) activation, which in turn induces tumor necrosis factor alpha (TNF-alpha) secretion and generates and inflammatory response in the lungs. Studies have shown that the more soluble the uranium salt, the more toxic it is. Ionizing radiation produced by uranium damages the DNA, resulting in gene mutations and chromosomal aberrations. This can both both initiate and promote carcinogenesis, and interfere with reproduction and development. (L249, A160) /GENOTOXICITY/ Depleted uranium (DU) is a radioactive heavy metal coming from the nuclear industry and used in numerous military applications. Uranium inhalation can lead to the development of fibrosis and neoplasia in the lungs. As little is known concerning the molecular processes leading to these pathological effects, some of the events in terms of genotoxicity and inflammation were investigated in rats exposed to DU by inhalation. Our results show that exposure to DU by inhalation resulted in DNA strand breaks in broncho-alveolar lavage (BAL) cells and in increase of inflammatory cytokine expression and production of hydroperoxides in lung tissue suggesting that the DNA damage was in part a consequence of the inflammatory processes and oxidative stress. The effects seemed to be linked to the doses, were independent of the solubility of uranium compounds and correlating with the type of inhalation. Repeated inhalations seemed to induce an effect of potentiation in BAL cells and also in kidney cells. Comet assay in neutral conditions revealed that DNA damage in BAL cells was composed partly by double strands breaks suggesting that radiation could contribute to DU genotoxic effects in vivo. All these in vivo results contribute to a better understanding of the pathological effect of DU inhalation. /Depleted uranium/
- Carcinogenicity: Uranium is combined with either bicarbonate or a plasma protein in the blood but once in the kidney, it is released and forms complexes with phosphate ligands and proteins in the tubular wall, causing damage. Uranium may also inhibit both sodium transport-dependent and independent ATP utilization and mitochondrial oxidative phosphorylation in the renal proximal tubule. Uranium causes respiratory diseases by damaging alveolar epithelium type II cells in the lungs. Uranium induces c-Jun N-terminal kinase (JNK) and p38 mitogen-activated protein kinase (p38 MAPK) activation, which in turn induces tumor necrosis factor alpha (TNF-alpha) secretion and generates and inflammatory response in the lungs. Studies have shown that the more soluble the uranium salt, the more toxic it is. Ionizing radiation produced by uranium damages the DNA, resulting in gene mutations and chromosomal aberrations. This can both both initiate and promote carcinogenesis, and interfere with reproduction and development. (L249, A160) A1; Confirmed human carcinogen. /Uranium (natural), soluble & insoluble compounds, as U/

- Reproductive toxicity: Uranium primarily damages the kidney, but may also damage the lungs, central nervous system, and immune system. Uranium's radioactivity is believed to damage the DNA, resulting in carcinogenic effects and reproductive and developmental damage. (L248, L249)
- STOT-single exposure: No data available.
- STOT-repeated exposure: /CASE REPORTS/ A small cohort of Gulf War veterans involved in friendly fire incidents where DU shells (penetrators) were used is being followed prospectively to assess the health effects from inhalation, wound contamination, and systemic absorption of retained DU metal fragments. A group of 33 soldiers was first evaluated in 1993/1994 ... They had elevated concentrations of urinary uranium, and mean urine uranium excretion was significantly higher in soldiers with retained metal fragments compared to those without fragments (4.47 vs. 0.03 ug/g creatinine). No evidence of a relationship between urine uranium and abnormal renal function could be demonstrated. In a subsequent follow-up of the same cohort, 29 of the original 33 were examined in 1997 and their results compared to 38 non-DU exposed, but Gulf War deployed soldiers. The correlation between 1994 and 1997 24-hr urinary uranium determinations was highly significant (Rsq = 0.8623) and urine uranium was again correlated with the presence of retained DU fragments. Exposed soldiers (with and without fragments) had 24-hr urinary uranium results ranging from 0.01 to 30.74 ug/g creatinine, whereas the nonexposed group's results ranged from 0.01 to 0.047 ug/g creatinine. The persistence of elevated uranium excretion suggests ongoing mobilization from a storage depot and results in chronic systemic exposure. Again, no renal abnormalities were found but neurocognitive examinations demonstrated a statistical relationship between urine uranium levels and lowered performance on computerized tests assessing performance efficiency. Elevated urinary uranium was also statistically related to a high prolactin level (> 1.6 ng/mL; p = .04). Uranium was also detected in the semen of 5 of 17 exposed veterans, but in none of 5 nonexposed veterans ... These findings ... document elevated urinary uranium excretion and small, but measurable, biochemical effects on the neuroendocrine and central nervous systems 7 yr after first exposure. /Depleted uranium/ /LABORATORY ANIMALS: Chronic Exposure or Carcinogenicity/ Sarcomas resulted in rats injected with metallic uranium in the femoral marrow & in the chest wall; it is unknown whether the sarcomas were due to metallocarcinogenic or radiocarcinogenic action.
- Aspiration hazard: No data available.

Likely routes of exposure
- Ingestion of uranium may cause vomiting and diarrhea. (L248)

Symptoms related to the physical, chemical and toxicological characteristics
- Uranium primarily damages the kidney, but may also damage the lungs, central nervous system, and immune system. Uranium's radioactivity is believed to damage the DNA, resulting in carcinogenic effects and reproductive and developmental damage. (L248, L249)

SECTION 12: Ecological information

Not available

SECTION 13: Disposal considerations

Not available

SECTION 14: Transport information

Not available

SECTION 15: Regulatory information

Not available

SECTION 16: Other information

Not available

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