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**MATERIAL SAFETY DATA SHEET (MSDS)****COBALT (II) NITRATE LR (HEXAHYDRATE)****1. Product Identification**

**Synonyms:** Nitric acid, cobalt (2+), hexahydrate; cobalt dinitrate hexahydrate; Cobalt nitrate hexahydrate  
**CAS No.:** 10141-05-6 Anhydrous; (10026-22-9 Hexahydrate)

Product Coad: C0073600100

**Molecular Weight:** 291.03  
**Chemical Formula:** Co(NO<sub>3</sub>)<sub>2</sub> 6H<sub>2</sub>O

**2. Composition/Information on Ingredients**

Ingredient	CAS No	Percent	Hazardous
Nitric Acid, Cobalt(2+) Salt	10141-05-6	90 - 100%	Yes

**3. Hazards Identification**

**Emergency Overview DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. CHRONIC EXPOSURE MAY AFFECT THYROID, LUNGS, HEART, AND KIDNEYS.**

**Inhalation:** Causes irritation to the respiratory tract, symptoms may include coughing, shortness of breath, and nausea. Respiratory hypersensitivity, asthma may appear. Inhalation of cobalt dust and fumes is associated with an increased incidence of lung disease.

**Ingestion:** Toxic. Causes abdominal pain, nausea, vomiting, flushing of the face and ears, mild hypotension, rash, and ringing in the ears. May have cumulative toxic action where elimination cannot keep pace with absorption. Large amounts depress erythrocyte production.

**Skin Contact:** Causes irritation to skin. Symptoms include redness, itching, and pain. May cause dermatitis. **Eye Contact:** Causes irritation, redness, and pain.

**Chronic Exposure:** Repeated oral administration may produce goiter and reduced thyroid activity. Prolonged or repeated skin exposure may cause dermatitis. Chronic exposure associated with kidney, heart and lung damage. **Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance. Persons with allergies or sensitivity to cobalt may also be more susceptible to the effects of the substance.

**4. First Aid Measures**

**Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

**Skin Contact:** Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:** Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

**5. Fire Fighting Measures**

**Fire:** Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition.

**Explosion:** Contact with oxidizable substances may cause extremely violent combustion.

**Fire Extinguishing Media:** If involved in a fire, use water spray.

**Special Information:** In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

**6. Accidental Release Measures**

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

**7. Handling and Storage**

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage and moisture. Isolate from any source of heat or ignition. Avoid storage on wood floors. Separate from incompatibles, combustibles, organic or other readily oxidizable materials. Wash hands before eating and do not eat, drink, or smoke in workplace. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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#### 8. Exposure Controls/Personal Protection

##### Airborne Exposure Limits:

For Cobalt Compound:-OSHA Permissible Exposure Limit (PEL):

0.1 mg/m3 (TWA) Cobalt metal dust and fume as Co

-ACGIH Threshold Limit Value (TLV):inorganic cobalt compounds: 0.02 mg/m3 (TWA) as Co,

A3: Animal carcinogen. **Ventilation System:** A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details. **Personal Respirators (NIOSH Approved):** If the exposure limit is exceeded and engineering controls are not feasible, a half-face high efficiency particulate respirator (NIOSH type N100 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece high efficiency particulate respirator (NIOSH type N100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres. **Skin Protection:** Wear protective gloves and clean body-covering clothing. **Eye Protection:** Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

#### 9. Physical and Chemical Properties

**Appearance:** Red crystals.

**Odor:** Odorless. **Solubility:** 134g/100ml water. **Density:** 1.87 @ 25C/4c **Boiling Point:** 75C (167F) **Melting Point:** 55C (131F)

#### 10. Stability and Reactivity

**Stability:** Stable under ordinary conditions of use and storage.

**Hazardous Decomposition Products:** Emits nitrous oxides when heated to decomposition.

**Hazardous Polymerization:** This substance does not polymerize. **Incompatibilities:** Tert-butyl hydroperoxide, ammonium hexacyanoferrate, organic substances, and any other readily oxidizable substance (paper, wood, sulfur, aluminum, plastics).

**Conditions to Avoid:** Incompatibles.

#### 11. Toxicological Information

##### Toxicological Data:

For Cobalt ( Nitrate):Oral rat LD50: 434 mg/kg. Investigated as a tumorigen and a reproductive effector.

##### Carcinogenicity:

Cobalt and its compounds have been shown to cause cancer in laboratory animals.

---NTP Carcinogen---

Ingredient	Known	Anticipated	IARC Category
Nitric Acid, Cobalt(2+) Salt	No	No	2B

(10141-05-6)

#### 12. Ecological Information

**Environmental Fate:** No information found.

**Environmental Toxicity:** No information found.

#### 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or

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contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

#### 14. Transport Information

##### International (Water, I.M.O.)

**Proper Shipping Name:** NITRATES, INORGANIC, N.O.S. (COBALT NITRATE 6 HYDRATE)

**Hazard Class:** 5.1

**UN/NA:** UN1477

**Packing Group:** II

#### 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----

Ingredient	TSCA	EC	Japan	Australia
Nitric Acid, Cobalt(2+) Salt (10141-05-6)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

--Canada--

Ingredient	Korea	DSL	NDSL	Phil.
Nitric Acid, Cobalt(2+) Salt (10141-05-6)	Yes	Yes	No	No

-----\Federal, State & International Regulations - Part 1\-----

-SARA 302- -----SARA 313-----

Ingredient	RQ	TPQ	List	Chemical Catg.
Nitric Acid, Cobalt(2+) Salt (10141-05-6)	No	No	No	Cobalt compo

-----\Federal, State & International Regulations - Part 2\-----

-RCRA- -TSCA-

Ingredient	CERCLA	261.33	8(d)
Nitric Acid, Cobalt(2+) Salt	1	No	No

(10141-05-6)

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No

SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No

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**MATERIAL SAFETY DATA SHEET (MSDS)****COBALT (II) NITRATE LR (HEXAHYDRATE)**

Reactivity: Yes (Pure / Solid)

**Australian Hazchem Code:** 1[T]

**Poison Schedule:** None allocated.

**WHMIS:** This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

**16. Other Information**

**NFPA Ratings:** Health: **2** Flammability: **0** Reactivity: **0** Other: **Oxidizer**

**Label Hazard Warning:** DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION. CHRONIC EXPOSURE MAY AFFECT THYROID, LUNGS, HEART, AND KIDNEYS.

**Label Precautions:** Keep from contact with clothing and other combustible materials.

Store in a tightly closed container.

Remove and wash contaminated clothing promptly.

Avoid contact with eyes, skin and clothing.

Avoid breathing dust.

Use with adequate ventilation.

Wash thoroughly after handling.

**Label First Aid:** In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes.

Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

**Product Use:** Laboratory Reagent.

In accordance with REACH Regulation (CE) N° 1907/2006 and with CLP Regulation (CE) N° 1272/2008

**DISCLAIMER:**

- **SUVCHEM** Products are to be used as Lab Chemicals for R&D only. Not for drug, medicinal, household or other uses.
- **SUVCHEM** shall not be responsible for any damage resulting from handling or from contact with the above product.
- **SUVCHEM** provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product.

**End of document**