



IN CASE OF EMERGENCY
24 HOUR CONTACT TELEPHONE
CHEM-TEL: (800)255-3924
Non-emergency Customer Service:
303-777-3777

COBALT NITRATE

MSDS Number: C4939 --- Effective Date: July 16, 2002

1. Product Identification

Synonyms: Nitric acid, cobalt (2+), hexahydrate; cobalt dinitrate hexahydrate; Cobalt nitrate hexahydrate
CAS No.: 10141-05-6
Molecular Weight: 291.03 Chemical
Formula: $\text{Co}(\text{NO}_3)_2 \cdot 6\text{H}_2\text{O}$ Product Codes:
NC-10870, NC-10180, C3050, C3060

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.

Safety Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate

Flammability Rating: 0 - None

Reactivity Rating: 3 - Severe (Oxidizer)

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT

Storage Color Code: Yellow (Reactive)

Potential Health Effects

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. Toxic to Fish. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

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.

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, a half-face high efficiency dust/mist respirator 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 dust/mist respirator 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. 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 dustin 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

pH: No information found.

% Volatiles by volume @ 21C (70F): 0

Boiling Point: 75C (167F)

Melting Point: 55C (131F)
Vapor Density (Air=1): No information found. Vapor
Pressure (mm Hg): Negligible.
Evaporation Rate (BuAc=1): No information found.

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.

-----\Cancer Lists\-----

---NTP Carcinogen---

Ingredient	Known	Anticipated	IARC Category
Nitric Acid, Cobalt(2+) Salt (10141-05-6)	No	No	2B

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 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

Domestic (Land, D.O.T.)

Proper Shipping Name: NITRATES, INORGANIC, N.O.S. (COBALT NITRATE

6 HYDRATE)

Hazard Class: 5.1

UN/NA: UN1477

Packing Group: II

Information reported for product/size: 100LB

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

Information reported for product/size: 100LB

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 (10141-05-6) 1 No No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
 Reactivity: Yes (Mixture / Solid)

Australian Hazchem Code: 1[T]
 Poison Schedule: No information found.
 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.

Revision Information: No changes.

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