



1. Identification

Product identifier COBALT NITRATE
Other means of identification
Product code C3050 - C3060
Synonym(s) Cobalt Dinitrate, Hexahydrate (CAS# 10026-22-9) * Cobalt Nitrate technical or reagent grade
Recommended use manufacture of other chemical products
Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name Post Apple Scientific, inc.
Address 8893 Gulf Rd.
North East, PA
U.S.A.
Telephone Phone 814-725-3330
Fax 814-725-8103
E-mail gordon@postapplescientific.com
Emergency phone number Emergency phone (USA) 800-424-9300 (CHEMTREC)

2. Hazard(s) identification

Physical hazards Oxidizing solids Category 2
Health hazards Acute toxicity, oral Category 4
Acute toxicity, inhalation Category 4
Serious eye damage/eye irritation Category 1
Sensitization, respiratory Category 1
Sensitization, skin Category 1
Germ cell mutagenicity Category 2
Carcinogenicity Category 1B
Reproductive toxicity (fertility) Category 1B
Environmental hazards Hazardous to the aquatic environment, acute hazard Category 1
Hazardous to the aquatic environment, long-term hazard Category 1
OSHA defined hazards Not classified.

*Hazards not stated here are "Not classified", "Not applicable" or "Classification not possible".

Label elements



Signal word Danger

Hazard statement May intensify fire; oxidizer. Harmful if swallowed. May cause an allergic skin reaction. Causes serious eye damage. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Suspected of causing genetic defects. May cause cancer. May damage fertility. Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat. Keep away from combustible materials. Take any precaution to avoid mixing with combustibles. Avoid breathing dust/fume. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing must not be allowed out of the workplace. Avoid release to the environment. Wear protective gloves/protective clothing/eye protection/face protection. In case of inadequate ventilation wear respiratory protection. Wash hands thoroughly after handling.

| | |
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| Response | If swallowed: Call a poison center/doctor if you feel unwell. If on skin: Wash with plenty of water. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. Specific treatment (see this label). Rinse mouth. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse. In case of fire: Use appropriate media to extinguish. Collect spillage. |
| Storage | Store locked up. |
| Disposal | Dispose of contents/container in accordance with local/regional/national/international regulations. |
| Hazard(s) not otherwise classified (HNOC) | None known. |
| Supplemental information | None. |

3. Composition/information on ingredients

Mixtures

| Chemical name | Common name and synonyms | CAS number | % |
|---------------------|--------------------------|------------|----|
| Cobalt nitrate | | 10141-05-6 | 63 |
| Waters of hydration | | 7732-18-5 | 37 |

4. First-aid measures

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| Inhalation | Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. |
| Skin contact | Remove contaminated clothing immediately and wash skin with soap and water. In case of eczema or other skin disorders: Seek medical attention and take along these instructions. Get medical attention if irritation develops and persists. |
| Eye contact | Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately. |
| Ingestion | Rinse mouth. IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. |
| Most important symptoms/effects, acute and delayed | Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. May cause allergic skin reaction. May cause allergic respiratory reaction. |
| Indication of immediate medical attention and special treatment needed | Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed. |
| General information | IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Wash contaminated clothing before reuse. |

5. Fire-fighting measures

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| Suitable extinguishing media | Water fog. Foam. Dry chemical powder. Dry sand. Carbon dioxide (CO2). |
| Unsuitable extinguishing media | None known. |
| Specific hazards arising from the chemical | None known. May intensify fire; oxidizer. |
| Special protective equipment and precautions for firefighters | Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. |
| Fire-fighting equipment/instructions | In the event of fire, cool tanks with water spray. Move containers from fire area if you can do so without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. |
| Specific methods | Cool containers exposed to flames with water until well after the fire is out. |
| General fire hazards | May intensify fire; oxidizer. |

6. Accidental release measures

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| Personal precautions, protective equipment and emergency procedures | Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Avoid inhalation of dust. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS. |
|--|--|

Methods and materials for containment and cleaning up

Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Prevent entry into waterways, sewers, basements or confined areas. Keep combustibles (wood, paper, oil, etc.) away from spilled material. This product is miscible in water. Stop the flow of material, if this is without risk. Collect spillage. Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage**Precautions for safe handling**

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat. Minimize dust generation and accumulation. Take any precaution to avoid mixing with combustibles. Do not get this material in contact with eyes. Do not taste or swallow. Avoid breathing dust. Avoid contact with skin. Avoid contact during pregnancy/while nursing. Avoid prolonged exposure. Avoid contact with clothing. Use only outdoors or in a well-ventilated area. In case of insufficient ventilation, wear suitable respiratory equipment. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. When using, do not eat, drink or smoke. Wash hands thoroughly after handling. Avoid release to the environment. Do not empty into drains.

Conditions for safe storage, including any incompatibilities

Store locked up. Keep away from heat. Store in original tightly closed container. Store in a cool, dry place out of direct sunlight. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Do not store near combustible materials. Store in accordance with local/regional/national/international regulation.

8. Exposure controls/personal protection**Occupational exposure limits****US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)**

| Components | Type | Value | Percent | Form |
|--------------------------------------|------|--------------------------|---------|----------------|
| COBALT COMPOUNDS (as Co) (7440-48-4) | PEL | 0.1 mg Co/M ³ | 20% | Dust and fume. |

US. ACGIH Threshold Limit Values

| Components | Type | Value | Percent |
|--------------------------------------|------|---------------------------|---------|
| COBALT COMPOUNDS (as Co) (7440-48-4) | TWA | 0.02 mg Co/M ³ | 20% |

US. NIOSH: Pocket Guide to Chemical Hazards

| Components | Type | Value | Percent | Form |
|--------------------------------------|------|---------------------------|---------|----------------|
| COBALT COMPOUNDS (as Co) (7440-48-4) | TWA | 0.05 mg Co/M ³ | 20% | Dust and fume. |

Biological limit values**ACGIH Biological Exposure Indices**

| Components | Value | Determinant | Specimen | Sampling Time |
|--|---------|-------------|----------|---------------|
| COBALT COMPOUNDS (as Co) (CAS 7440-48-4) | 15 µg/l | Cobalt | Urine | * |
| | 1 µg/l | Cobalt | Blood | * |

* - For sampling details, please see the source document.

Exposure guidelines

No exposure standards allocated.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Wear eye/face protection. Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin protection**Hand protection**

Wear appropriate chemical resistant gloves.

Other

Wear appropriate chemical resistant clothing.

Respiratory protection

Wear positive pressure self-contained breathing apparatus (SCBA).

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

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|---|----------------------------|
| Appearance | crystals |
| Physical state | Solid. |
| Form | Solid. |
| Color | Red. |
| Odor | Slight nitric acid odor. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | 212 °F (100 °C) decomposes |
| Initial boiling point and boiling range | Not applicable |
| Flash point | Not available. |
| Evaporation rate | Not available. |
| Flammability (solid, gas) | Not available. |
| Upper/lower flammability or explosive limits | |
| Flammability limit - lower (%) | Not available. |
| Flammability limit - upper (%) | Not available. |
| Explosive limit - lower (%) | Not available. |
| Explosive limit - upper (%) | Not available. |
| Vapor pressure | Not available. |
| Vapor density | Not available. |
| Relative density | Not available. |
| Solubility(ies) | |
| Solubility (water) | > 669.6 g/l soluble |
| Partition coefficient (n-octanol/water) | Not available. |
| Auto-ignition temperature | Not available. |
| Decomposition temperature | 212 °F (100 °C) |
| Viscosity | Not available. |
| Other information | |
| Specific gravity | 1.88 |
| Loose Packing Density | Not available. |

10. Stability and reactivity

| | |
|---|--|
| Reactivity | The product is stable and non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Material is stable under normal conditions. |
| Possibility of hazardous reactions | Hazardous polymerization does not occur. |
| Conditions to avoid | Excessive heat. Avoid temperatures exceeding the decomposition temperature. None known. Contact with incompatible materials. |
| Incompatible materials | Strong oxidizing agents. |
| Hazardous decomposition products | No dangerous reaction known under conditions of normal use. |

11. Toxicological information**Information on likely routes of exposure**

| | |
|---------------------|--|
| Ingestion | Harmful if swallowed. |
| Inhalation | Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin contact | May cause an allergic skin reaction. |
| Eye contact | Causes serious eye damage. |

Symptoms related to the physical, chemical and toxicological characteristics Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

Information on toxicological effects

Acute toxicity Harmful if inhaled. Harmful if swallowed. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause allergic skin reaction.

| Components | Species | Test Results |
|---------------------------------|---------|--------------|
| Cobalt nitrate (CAS 10141-05-6) | | |
| Acute | | |
| <i>Oral</i> | | |
| LD50 | Rat | 691 mg/kg |

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation Not available.

Serious eye damage/eye irritation Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization May cause an allergic skin reaction.

Germ cell mutagenicity Suspected of causing genetic defects.

Carcinogenicity May cause cancer.

Reproductive toxicity May damage fertility.

Specific target organ toxicity - single exposure Not classified.

Specific target organ toxicity - repeated exposure Not classified.

Aspiration hazard Not available.

Chronic effects Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

Further information Overexposure to cobalt compounds may cause respiratory sensitization and an allergic skin rash. They are mildly irritating to the eyes and if swallowed, may cause vomiting and diarrhea and a sensation of hotness. Excessive inhalation and/or ingestion of cobalt salts may affect the kidneys, lungs, and thyroid.

12. Ecological information

Ecotoxicity Very toxic to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

| Product | Species | Test Results | |
|------------------------------|---------|--------------|-----------------------------------|
| COBALT NITRATE (CAS Mixture) | | | |
| Crustacea | EC50 | Daphnia | 16.2429 mg/l, 48 hours estimated |
| Fish | LC50 | Fish | 118.6508 mg/l, 96 hours estimated |

* Estimates for product may be based on additional component data not shown.

Persistence and degradability Not established.

Bioaccumulative potential Not established.

Mobility in soil No data available.

Other adverse effects Not established.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. This material and its container must be disposed of as hazardous waste. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. If discarded, this product is considered a RCRA flammable waste, D001. Dispose of contents/container in accordance with local/regional/national/international regulations.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

| | |
|------------------------------|---|
| UN number | UN1477 |
| UN proper shipping name | Nitrates, inorganic, n.o.s. (Cobalt nitrate) |
| Transport hazard class(es) | |
| Class | 5.1 |
| Subsidiary risk | - |
| Label(s) | 5.1 |
| Packing group | II |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Special provisions | IB8, IP2, IP4, T3, TP33 |
| Packaging exceptions | 152 |
| Packaging non bulk | 212 |
| Packaging bulk | 240 |

IATA

| | |
|------------------------------|---|
| UN number | . |
| UN proper shipping name | Nitrates, inorganic, n.o.s. (Cobalt nitrate) |
| Transport hazard class(es) | |
| Class | 5.1 |
| Subsidiary risk | - |
| Packing group | II |
| Environmental hazards | No. |
| ERG Code | 5L |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Other information | |
| Passenger and cargo aircraft | Forbidden. |
| Cargo aircraft only | Allowed. |

IMDG

| | |
|--|---|
| UN number | UN1477 |
| UN proper shipping name | NITRATES, INORGANIC, N.O.S. (Cobalt nitrate), MARINE POLLUTANT |
| Transport hazard class(es) | |
| Class | 5.1 |
| Subsidiary risk | - |
| Packing group | II |
| Environmental hazards | |
| Marine pollutant | Yes |
| EmS | F-A, S-Q |
| Special precautions for user | Read safety instructions, SDS and emergency procedures before handling. |
| Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not applicable. |

DOT



IATA; IMDG





15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories
 Immediate Hazard - Yes
 Delayed Hazard - Yes
 Fire Hazard - Yes
 Pressure Hazard - No
 Reactivity Hazard - No

SARA 302 Extremely hazardous substance No

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

| Chemical name | CAS number | % by wt. |
|--|------------|----------|
| Cobalt Compounds N096 | 10141-05-6 | 63 |
| Water Dissociable Nitrate Compounds N511 | | 100 |

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Cobalt nitrate (CAS 10141-05-6)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Cobalt nitrate (CAS 10141-05-6)

US. New Jersey Worker and Community Right-to-Know Act

Cobalt nitrate (CAS 10141-05-6) 500 LBS

US. Pennsylvania RTK - Hazardous Substances

Cobalt nitrate (CAS 10141-05-6)

US. Rhode Island RTK

Cobalt nitrate (CAS 10141-05-6)

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

International Inventories

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|----------------------|--|------------------------|
| Australia | Australian Inventory of Chemical Substances (AICS) | Yes |
| Canada | Domestic Substances List (DSL) | Yes |
| Canada | Non-Domestic Substances List (NDSL) | No |
| China | Inventory of Existing Chemical Substances in China (IECSC) | Yes |
| Europe | European Inventory of Existing Commercial Chemical Substances (EINECS) | Yes |

| Country(s) or region | Inventory name | On inventory (yes/no)* |
|-----------------------------|---|------------------------|
| Europe | European List of Notified Chemical Substances (ELINCS) | No |
| Japan | Inventory of Existing and New Chemical Substances (ENCS) | Yes |
| Korea | Existing Chemicals List (ECL) | Yes |
| New Zealand | New Zealand Inventory | Yes |
| Philippines | Philippine Inventory of Chemicals and Chemical Substances (PICCS) | Yes |
| United States & Puerto Rico | Toxic Substances Control Act (TSCA) Inventory | Yes |

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 02-11-2015

Version # 01

Disclaimer

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Revision Information

Product and Company Identification: Synonyms
Composition / Information on Ingredients: Ingredients
Handling and storage: Conditions for safe storage, including any incompatibilities
Physical & Chemical Properties: Multiple Properties
Transport Information: Proper Shipping Name/Packing Group
HazReg Data: North America
GHS: Classification