

COBALTOUS NITRATE HEXAHYDRATE

GHS Safety Data Sheet

Version No: 2.0

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

COBALTOUS NITRATE HEXAHYDRATE

OTHER NAMES

Co-N₂-O₆, Co(NO₃)₂, "cobaltous nitrate", "cobalt dinitrate",
 "nitric acid, cobalt (II) salt"

PROPER SHIPPING NAME

NITRATES, INORGANIC, N.O.S.

PRODUCT USE

Used in manufacture of cobalt pigments and invisible inks; decorating stoneware and porcelain; preparation of catalysts and production of vitamin B12 supplements.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

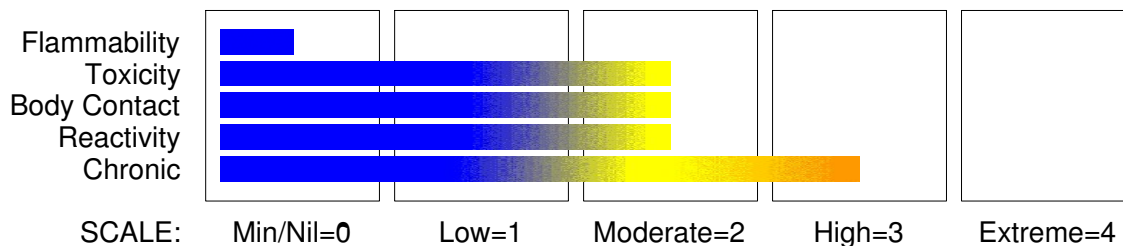
technical@sdfine.com

Telephone: 91- 22- 24959898

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HAZARD RATINGS



continued...

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Section 2 - HAZARDS IDENTIFICATION

GHS Classification

Acute Toxicity (Inhalation) Category 4
Acute Toxicity (Oral) Category 4
Carcinogen Category 1B
Chronic Aquatic Hazard Category 1
Eye Irritation Category 2A
Oxidizing Solid Category 2
Reproductive Toxicity Category 1B
Respiratory Irritation Category 3
Respiratory Sensitizer Category 1
Skin Corrosion/Irritation Category 3
Skin Sensitizer Category 1



EMERGENCY OVERVIEW

HAZARD

DANGER

Determined by using GHS criteria:

H335 H273 H332 H302 H316 H319 H334 H317 H350 H360 H410

May cause respiratory irritation

May intensify fire; oxidizer

Harmful if inhaled

Harmful if swallowed

Causes mild skin irritation

Causes serious eye irritation

May cause allergic or asthmatic symptoms or breathing difficulties if inhaled

May cause allergic skin reaction

May cause cancer by inhalation

May damage fertility

Very toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENTS

Prevention

Avoid breathing dust/fume/gas/mist/vapours/spray.

In case of inadequate ventilation wear respiratory protection.

Use only outdoors or in a well ventilated area.

Do not handle until all safety precautions have been read and understood.

Use personal protective equipment as required.

Contaminated clothing should not be allowed out of the workplace.

Obtain special instructions before use.

Wash hands thoroughly after handling.

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Section 2 - HAZARDS IDENTIFICATION

Do not eat, drink or smoke when using this product.
Take any precaution to avoid mixing with combustible or incompatible materials.
Keep away from heat.

Response

If exposed or concerned: Get medical attention advice.
If eye irritation persists, get medical advice/attention.
Wear eye/face protection.
If skin irritation or rash occurs, seek medical advice/attention.
IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
If experiencing respiratory symptoms call a POISON CENTER or doctor/physician.
If skin irritation occurs, seek medical advice/attention.
IF ON SKIN: Gently wash with plenty of soap and water.
Call a POISON CENTER or doctor/physician if you feel unwell.
Specific treatment: refer to Label or MSDS.
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
Wash contaminated clothing before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

Store locked up.
Store away from combustibles and incompatible materials

Disposal

Dispose of contents and container in accordance with relevant legislation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
cobalt(II) nitrate	10141-05-6	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
- For advice, contact a Poisons Information Centre or a doctor.
- Urgent hospital treatment is likely to be needed.
- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the MSDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the MSDS.
- Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
- INDUCE vomiting with fingers down the back of the throat, ONLY IF CONSCIOUS. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

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Section 4 - FIRST AID MEASURES

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

The toxicity of nitrates and nitrites result from their vasodilating properties and their propensity to form methaemoglobin.

- Most produce a peak effect within 30 minutes.
- Clinical signs of cyanosis appear before other symptoms because of the dark pigmentation of methaemoglobin.
- Initial attention should be directed towards improving oxygen delivery, with assisted ventilation, if necessary. Hyperbaric oxygen has not demonstrated conclusive benefits.
- Institute cardiac monitoring, especially in patients with coronary artery or pulmonary disease.
- Hypotension should respond to Trendelenburg's position and intravenous fluids; otherwise dopamine may be needed.
- Naloxone, glucose and thiamine should be given if a multiple ingestion is suspected.
- Decontaminate using Ipecac Syrup for alert patients or lavage for obtunded patients who present within 2-4 hours of ingestion.
- Symptomatic patients with methaemoglobin levels over 30% should receive methylene blue. (Cyanosis alone, is not an indication for treatment). The usual dose is 1-2 mg/kg of a 1% solution (10 mg/ml) IV over 5 minutes; repeat, using the same dose if symptoms of hypoxia fail to subside within 1 hour.

[Ellenhorn and Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker who has been exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
1. Methaemoglobin in blood	1.5% of haemoglobin	During or end of shift	B, NS, SQ

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Section 4 - FIRST AID MEASURES

B: Background levels occur in specimens collected from subjects NOT exposed

NS: Non-specific determinant; also observed after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray or fog.

Foam.

- Alcohol stable foam.

Dry chemical powder.

Carbon dioxide.

FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.

- May be violently or explosively reactive.

- Wear breathing apparatus plus protective gloves for fire only.

- Prevent, by any means available, spillage from entering drains or water courses.

Use water delivered as a fine spray to control the fire and cool adjacent area.

DO NOT approach containers suspected to be hot.

Cool fire exposed containers with water spray from a protected location.

If safe to do so, remove containers from path of fire.

Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

Will not burn but increases intensity of fire.

Moderate explosion hazard when exposed to flame or involved in fire.

Contact with readily oxidisable organic material may cause ignition /fire.

Decomposes on heating and produces toxic fumes of nitrogen oxides (NO_x).

FIRE INCOMPATIBILITY

Avoid storage with reducing agents.

Personal Protective Equipment

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

Clean up all spills immediately.

Control personal contact by using protective equipment.

Use dry clean up procedures and avoid generating dust.

Trowel up/scrape up.

Place in suitable containers for disposal.

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Section 6 - ACCIDENTAL RELEASE MEASURES

MAJOR SPILLS

Clear area of personnel.

Alert Fire Brigade and tell them location and nature of hazard.

Pollutant - contain spillage.

- Wear breathing apparatus plus protective gloves.

- Prevent, by any means available, spillage from entering drains or water courses.

Shut off all possible sources of ignition and increase ventilation.

Stop leak if safe to do so.

Use dry clean up procedures and avoid generating dust.

Collect recoverable product into labelled containers for recycling.

Collect residues and seal in labelled drums for disposal.

Wash area down with large quantity of water and prevent runoff into drains.

If contamination of drains or waterways occurs, advise emergency services.

After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

cobalt(II) nitrate 100 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

cobalt(II) nitrate 0.5 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

cobalt(II) nitrate 0.3 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:

cobalt(II) nitrate 0.1 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



X X X X X 0

+: May be stored together

O: May be stored together with specific preventions

X: Must not be stored together

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

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Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Use good occupational work practice.
Avoid generating and breathing dust.
Avoid contact with skin and eyes.
Avoid sources of heat.
Wear protective clothing when risk of exposure occurs.
Use in a well-ventilated area.
Local exhaust ventilation may be required for safe working, i.e. to keep exposures below required standards, otherwise PPE is required.
Handle and open container with care.
Avoid contact with incompatible materials.
Avoid physical damage to containers.
Keep containers securely sealed when not in use.
When handling, DO NOT eat, drink or smoke.
Always wash hands with soap and water after handling. Work clothes should be laundered separately.

SUITABLE CONTAINER

Packaging as recommended by manufacturer.
· Check that containers are clearly labelled.
Glass container.
Plastic container.
Metal drum.

STORAGE INCOMPATIBILITY

Store away from combustible and readily oxidisable materials, sodium hypophosphite, stannous chloride and reducing agents.
· A mixture of aluminium powder, water and metal nitrate may explode due to a self accelerating reaction.
· Mixtures of metal nitrates with alkyl esters may explode due to the formation of unstable alkyl nitrates.
· Mixtures of a nitrate with phosphorous, tin(II) chloride and other reducing agents may react explosively.
· Mixtures of metal nitrates and phosphinates may explode on heating.
· Mixtures containing nitrates and organic materials are potentially dangerous, especially if acidic materials or heavy metals are present.
· Metal nitrates are incompatible with cyanides, thiocyanates, isothiocyanates and hypophosphites.

STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.
Store in original containers.
Store in a cool, dry place.
Store away from incompatible materials.
Store away from foodstuff containers.
Store at ambient temperatures.
No smoking, naked lights, heat or ignition sources.
DO NOT store on wooden floors.
Keep containers securely sealed.
Protect containers against physical damage.

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- cobalt(II) nitrate:

CAS:10141- 05- 6 CAS:10026- 22- 9 CAS:66905- 41- 7
CAS:56767- 13- 6 CAS:24606- 35- 7

MATERIAL DATA

Epidemiological studies do not support a link between cobalt and abnormal growths (neoplasms) in humans.

In view of the serious effects seen in experimental animals after a relatively short exposure period at 0.1 mg/m³ the recommended TLV-TWA is thought to reduce the significant risk of material impairment of health posed by respiratory disease and pulmonary sensitization which have been shown to occur at higher levels of exposure. The value does not apply generally to cobalt compounds. A significant increase in the risk of lung cancer was reported among workers involved in cobalt production (with concomitant exposure to nickel and arsenic) and hard-metal workers with documented exposure to cobalt-containing dusts.

A significant increase in lung cancer risk was reported among workers involved in cobalt production (with concomitant exposure to nickel and arsenic) and hard-metal workers with documented exposure to cobalt-containing dusts. A significant increase in lung cancer risk has been observed in workers whose exposure began more than 20 years previously. A number of single cases of malignant tumours, mostly sarcomas, have been reported at the site, following implant of cobalt-containing orthopedic implants.

PERSONAL PROTECTION



EYE

- Chemical goggles.
- Full face shield.

DO NOT wear contact lenses.

• Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

HANDS/FEET

Impervious gloves.
Butyl rubber gloves.
Neoprene gloves.
Safety footwear.
Rubber boots.

OTHER

Overalls.
· Impervious apron.
· Impervious protective clothing.
· Barrier cream.
· Eyewash unit.
Ensure there is ready access to a safety shower.
Equipment should be kept clean and in working-order.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.

For further information consult your Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25- 0.5 m/s (50- 100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5- 1 m/s (100- 200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1- 2.5 m/s (200- 500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid	2.5- 10 m/s (500- 2000 f/min.)

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

air motion).

Within each range the appropriate value depends on:

Lower end of the range

1: Room air currents minimal or favourable to capture

2: Contaminants of low toxicity or of nuisance value only.

3: Intermittent, low production.

4: Large hood or large air mass in motion

Upper end of the range

1: Disturbing room air currents

2: Contaminants of high toxicity

3: High production, heavy use

4: Small hood- local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Odorless, pale red powder, soluble in water.

PHYSICAL PROPERTIES

Solid.

Mixes with water.

Contact with acids liberates toxic gas.

Molecular Weight: 182.95

Melting Range (°C): 55- 56

Solubility in water (g/L): Miscible

pH (1% solution): <7

Volatile Component (%vol): None.

Relative Vapour Density (air=1): Not applicable.

Lower Explosive Limit (%): Not applicable

Autoignition Temp (°C): Not applicable

State: Divided solid

Boiling Range (°C): 74

Specific Gravity (water=1): 2.49

pH (as supplied): Not applicable

Vapour Pressure (kPa): Not applicable.

Evaporation Rate: Not applicable

Flash Point (°C): Non combustible

Upper Explosive Limit (%): Not applicable

Decomposition Temp (°C): Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Presence of incompatible materials.

Storage in unsealed containers.

Product is considered stable under normal handling conditions.

Hazardous polymerisation will not occur.

Stable under normal storage conditions.

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COBALTOUS NITRATE HEXAHYDRATE

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

Animal test indicate an increase in red blood cells (polycythaemia) following the absorption of cobalt salts. [ICI] In toxic doses soluble cobalt salts act locally on the gastro-intestinal tract to produce pain and vomiting. Systemic effects in man include a peculiar vasodilation (flushing) of the face and ears, mild hypotension, rash, tinnitus (ringing in the ears) and nerve deafness. [GOSSELIN, SMITH HODGE: Clinical Toxicology of Commercial Products].

The substance and/or its metabolites may bind to haemoglobin inhibiting normal uptake of oxygen. This condition, known as "methaemoglobinemia", is a form of oxygen starvation (anoxia).

Symptoms include cyanosis (a bluish discolouration skin and mucous membranes) and breathing difficulties. Symptoms may not be evident until several hours after exposure.

At about 15% concentration of blood methaemoglobin there is observable cyanosis of the lips, nose and earlobes. Symptoms may be absent although euphoria, flushed face and headache are commonly experienced. At 25-40%, cyanosis is marked but little disability occurs other than that produced on physical exertion. At 40-60%, symptoms include weakness, dizziness, lightheadedness, increasingly severe headache, ataxia, rapid shallow respiration, drowsiness, nausea, vomiting, confusion, lethargy and stupor. Above 60% symptoms include dyspnea, respiratory depression, tachycardia or bradycardia, and convulsions. Levels exceeding 70% may be fatal.

EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.

Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

The dust may produce eye discomfort causing transient smarting, blinking.

SKIN

Limited evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the

COBALTOUS NITRATE HEXAHYDRATE

Section 11 - TOXICOLOGICAL INFORMATION

spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

Sensitisation may result in allergic dermatitis responses including rash, itching, hives or swelling of extremities.

INHALED

Limited evidence exists, or practical experience predicts, that the material produces irritation of the respiratory system in a significant number of individuals following inhalation.

Health hazards from welding fume containing cobalt are not well documented but there are well-known dangers associated with the processing of the substance by other techniques. Inhalation of the fume may result in shortness of breath, coughing and pneumonitis.

Hypersensitivity, involving lung changes, occurs in a small number of workers exposed to the fume; the symptoms disappear after exposure ends. Obliterative bronchiolitis adenomatosis has been produced in guinea pigs receiving intratracheal injections of 10 mg cobalt dust. Intratracheal administration of 12.5 mg/kg caused lethargy and death in rats in 15 minutes to 6 hours.

CHRONIC HEALTH EFFECTS

Practical evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a substantial number of individuals at a greater frequency than would be expected from the response of a normal population.

Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking.

Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.

There is sufficient evidence to provide a strong presumption that human exposure to the material may result in impaired fertility on the basis of: - clear evidence in animal studies of impaired fertility in the absence of toxic effects, or evidence of impaired fertility occurring at around the same dose levels as other toxic effects but which is not a secondary non-specific consequence of other toxic effects.

Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts.

Occupational asthma attributed to the inhalation of cobalt powder has been confirmed following bronchial challenge tests. Chest tightness and chronic bronchitis have been recorded in hard-metal workers exposed to cobalt. Chronic exposure to cobalt produces polycythaemia (increase in blood haemoglobin), increased production of cells of the bone marrow and thyroid gland, pericardial effusion and damage to the alpha cells of the pancreas. Chronic administration of cobaltous chloride has produced goiter, reduced thyroid activity and lowered synthesis rates and levels of cytochrome P-450, an enzymatic system responsible for chemical detoxification, in the liver.

Animals also exhibit an increase in respiration, as well as tremor and convulsion. A toxic nephritis (kidney disease) may also develop. Epidemic cardiomyopathy (heart disease) among heavy beer drinkers in the 1960's in Canada, the USA and Belgium has been attributed to the addition of up to 1.5 ppm of cobalt as a foam restorative and stabiliser. Other factors are probably implicated as therapeutic doses of cobalt, up to 50 mg/day (in the treatment of refractory anaemias) do not produce this effect. Inadequate protein or vitamin intake amongst heavy drinkers, or the effects of alcohol in

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Section 11 - TOXICOLOGICAL INFORMATION

rendering the heart more susceptible to disease may be important. Allergic dermatitis of an erythematous papular type may also occur following occupational exposures and may also have positive skin tests.

Cobalt metal dust inhalations by miniature swine resulted in early marked decrease in lung compliance and increases in septal collagen. After a one-week "sensitising period", followed by a 10-day lapse period, further exposures produced wheezing produced by hypersensitivity reactions. Single and repeated subcutaneous or intramuscular injection of cobalt powder and salts to rats may cause sarcoma at the injection site but evidence for carcinogenicity by any other route of exposure does not exist. A number of single cases of malignant tumours, mostly sarcomas, have been reported at the site of orthopedic implants containing cobalt.

TOXICITY AND IRRITATION

TOXICITY

Oral (rat) LD50: 434 mg/kg

WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

IRRITATION

Nil Reported

Section 12 - ECOLOGICAL INFORMATION

Hazardous Air Pollutant: Yes

No data for cobalt(II) nitrate.

Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.
Consult manufacturer for recycling options.
Consult State Land Waste Management Authority for disposal.
DO NOT discharge into sewer or waterways.
Treat and neutralise at an effluent treatment plant.
Bury residue in an authorised landfill.
Return empty containers to supplier or bury empty containers at an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



Labels Required: OXIDIZING AGENT
HAZCHEM: 1[Z]

UNDG:

Dangerous Goods Class: 5.1
UN Number: 1477

Subrisk: None
Packing Group: II

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Section 14 - TRANSPORTATION INFORMATION

Shipping Name: NITRATES, INORGANIC, N.O.S.

Air Transport IATA:

ICAO/IATA Class:	5.1	ICAO/IATA Subrisk:	None
UN/ID Number:	1477	Packing Group:	II
ERG Code:	5L		

Shipping name: NITRATES, INORGANIC, N.O.S.

Maritime Transport IMDG:

IMDG Class:	5.1	IMDG Subrisk:	None
UN Number:	1477	Packing Group:	II
EMS Number:	F- A, S- Q		

Shipping name: NITRATES, INORGANIC, N.O.S.

Section 15 - REGULATORY INFORMATION

REGULATIONS

No regulations applicable

No data available for cobalt(II) nitrate as CAS: 10141-05-6, CAS: 10026-22-9, CAS: 66905-41-7, CAS: 56767-13-6, CAS: 24606-35-7.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
cobalt(II) nitrate	10141- 05- 6, 10026- 22- 9, 66905- 41- 7, 56767- 13- 6, 24606- 35- 7

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 12-May-2018