

SAFETY DATA SHEET



Cobalt Metal

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

1.1 Product identifier

Product name : Cobalt Metal
Index number : 027-001-00-9
EC number : 231-158-0

REACH Registration number

Registration number	Legal entity
01-2119517392-44-0020	HH Compliance Acting as Only Representative, Email C Terrett: info@h2compliance.com

CAS number : 7440-48-4
Product code : Not available.
Product description : Not available.
Product type : Massive metal. Solid.
Other means of identification : Cobalt metal, Cobalt Rounds
Chemical formula : Co

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses
Use at industrial sites; Use of cobalt in the manufacture of inorganic cobalt substances (intermediate use)
Use at industrial sites; Use of cobalt in the manufacture of cobalt carboxylates and resins (intermediate use)
Use at industrial sites; Industrial use of cobalt containing catalysts
Use at industrial sites; Production and industrial use of cobalt containing alloys, steels and tools
Use at industrial sites; Industrial use of cobalt in the production of diamond tools
Use at industrial sites; Industrial use of cobalt metal in additive manufacturing (3D-printing)
Service life (worker at industrial site); Service life of cobalt containing alloys, steels and tools in industrial settings
Service life (worker at industrial site); Welding in industrial settings
Service life (professional worker); Welding in professional settings
Service life (professional worker); Service life of cobalt-containing tools in professional settings
Service life (professional worker); Service life of dental alloys containing cobalt in professional settings
Service life (consumers); dental alloys
Service life (consumers); diamond tools and other cobalt-containing tools other than hard metal
Use at industrial sites; Industrial use of cobalt in passivation processes in surface treatment
Use at industrial sites; Passivation processes in surface treatment at large industrial sites with continuous processes
Use at industrial sites; Industrial use of cobalt in plating processes in surface treatment
Use at industrial sites; Industrial use of cobalt in thermal spraying in surface treatment
Service life (worker at industrial site); Industrial handling of surface treated articles (passivated/plated/sprayed)
Service life (professional worker); Professional handling of surface treated articles (passivated/plated/sprayed)
Service life (consumers); heat and wear resistant vehicle parts
Use at industrial sites; Production of cobalt-containing batteries
Service life (worker at industrial site); Service life of cobalt-containing batteries in industrial settings
Service life (professional worker); Service life of cobalt-containing batteries in professional settings ES 27 - Use at industrial sites; Industrial use of cobalt in the production of varistors and magnets (calcination/sintering processes)
Use at industrial sites; Industrial use of cobalt in the manufacture of inorganic pigments, frits, ceramic ware, glass
Service life (worker at industrial site); Service life of cobalt-containing varistors and magnets in industrial settings
Service life (professional worker); Service life of cobalt-containing varistors and magnets in professional settings
Service life (consumers); cobalt being encapsulated in the internal part of the product
Use at industrial sites; Production of hardmetal powder
Use at industrial sites; Production of sintered hardmetal articles
Use at industrial sites; Production of hardmetal powder for surface technology
Service life (worker at industrial site); Service life of hardmetal articles in industrial settings
Service life (professional worker); Service life of hardmetal articles in professional settings

Cobalt Metal

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

Service life (consumers); hard metal articles
Use at industrial sites; Use of cobalt as an intermediate in the manufacture of catalysts
Formulation or re-packing; Formulation of cobalt for the use in brazing techniques
Use at industrial sites; Industrial use of cobalt-containing mixtures in brazing techniques

Uses advised against

Reason

None identified.

1.3 Details of the supplier of the safety data sheet

Vale Canada Limited, 200 Bay Street, Royal Bank Plaza, Suite 1500, South Tower, PO Box 70, Toronto, Ontario, Canada, M5J 2K2, Email: msds@vale.com

e-mail address of person responsible for this SDS : msds@vale.com

National contact

Manufacturer

Vale Canada Limited, Port Colborne Refinery, 187 Davis Street, Port Colborne, Ontario, Canada, L3K 5W2, Email: msds@vale.com

Vale Canada Newfoundland and Labrador, 1 Nickel Road, PO Box 39, Long Harbour, NL, Canada, A0B 2J0, Email: msds@vale.com

Distribution

Vale Canada Limited, 200 Bay Street, Royal Bank Plaza, Suite 1500, South Tower, PO Box 70, Toronto, Ontario, Canada, M5J 2K2, Email: msds@vale.com

Vale Americas Inc., 140 E. Ridgewood Avenue, Suite 415, South Tower, Paramus, NJ 07652, U.S.A, Email: msds@vale.com

Vale Europe Limited, Clydach Refinery, Clydach, Swansea, UK, SA6 5QR, Email: msds@vale.com

Vale Holdings BV, Piet Heinkade 55, 1019GM, Amsterdam, The Netherlands, Telephone Number 31 20 308 5644 214, Email: msds@vale.com

Vale International SA, Route de Pallatex 29, 1162 Saint-Prex, Switzerland, Email: msds@vale.com

REACH Only Representative for Vale: HH Compliance, Rubicon Building, CIT Campus, T12Y275, Bishopstown, Cork, Republic of Ireland; OR Manager, Telephone number: +353-21-486-81121, Email C Terrett: info@h2compliance.com

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number : None assigned.

Supplier

Telephone number : For Fire, Spill, or Chemical Emergency call CHEMTREC: +1 703 527-3887; for Europe call CHEMTREC: +(44) 870 8200418

Hours of operation : 24-hour telephone and/or website

Information limitations : Emergency essential information

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Carc. 1B, H350

Muta. 2, H341

Repr. 1B, H360F

Acute Tox. 4, H302

Resp. Sens. 1, H334

Skin Sens. 1, H317

Aquatic Chronic 4, H413

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Cobalt Metal

SECTION 2: Hazards identification

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Harmful if swallowed.
 May cause an allergic skin reaction.
 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 Suspected of causing genetic defects.
 May cause cancer.
 May damage fertility.
 May cause long lasting harmful effects to aquatic life.

Precautionary statements

General

: Read carefully and follow all instructions. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention

: Obtain special instructions before use. Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection. Wear respiratory protection. Avoid breathing dust or mist. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response

: IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention.

Storage

: Store locked up.

Disposal

: Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients

: cobalt

Supplemental label elements

: Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Restricted to professional users.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

: Yes, applicable.

Tactile warning of danger

: Yes, applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

PBT	P	B	T	vPvB	vP	vB
Not applicable (Inorganic)	N/A	N/A	N/A	Not applicable (Inorganic)	N/A	N/A

Other hazards which do not result in classification

: None known.

Cobalt Metal

SECTION 3: Composition/information on ingredients

3.1 Substances : Mono-constituent substance

Product/ingredient name	Identifiers	%	Classification	Specific Conc. Limits, M-factors and ATEs	Type
cobalt	EC: 231-158-0 CAS: 7440-48-4 Index: 027-001-00-9	100	Acute Tox. 4, H302 Resp. Sens. 1, H334 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350 Repr. 1B, H360F Aquatic Chronic 4, H413 See Section 16 for the full text of the H statements declared above.	ATE [Oral] = 550 mg/kg	[1]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[1] Constituent

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures

4.1 Description of first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In the event of any complaints or symptoms, avoid further exposure.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Cobalt Metal

SECTION 4: First aid measures

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
irritation
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : No specific fire or explosion hazard.
- Hazardous combustion products** : Decomposition products may include the following materials:
metal oxide/oxides

5.3 Advice for firefighters

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

Cobalt Metal

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- 6.2 Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing dust. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Cobalt Metal

SECTION 7: Handling and storage

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. Information is provided based on typical anticipated uses of the product. Additional measures might be required for bulk handling or other uses that could significantly increase worker exposure or environmental releases.

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
cobalt	DNEL	Long term Inhalation	6.3 µg/m ³	General population	Local
	DNEL	Long term Oral	29.8 µg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	40 µg/m ³	Workers	Local

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
cobalt	Fresh water	0.62 µg/l	-
	Marine water	2.36 µg/l	-
	Fresh water sediment	53.8 mg/kg	-
	Marine water sediment	69.8 mg/kg	-
	Soil	10.9 mg/kg	-
	Sewage Treatment Plant	0.37 µg/l	-

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Cobalt Metal

SECTION 8: Exposure controls/personal protection

- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields. If operating conditions cause high dust concentrations to be produced, use dust goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties

Appearance

- Physical state** : Solid.
- Color** : Gray. Black. Silver.
- Odor** : Odorless.
- Odor threshold** : Not available.
- Melting point/freezing point** : 1493°C
- Initial boiling point and boiling range** : 2870°C (5198°F)
- Flammability** : Not available.
- Lower and upper explosion limit** : Not applicable.
- Flash point** : Not applicable.
- Auto-ignition temperature** : Not applicable.
- Decomposition temperature** : Not available.
- pH** : Not available.
- Viscosity** : Not applicable.
- Solubility in water** : 0.0000001 g/l [OECD 105]
- Partition coefficient: n-octanol/water** : Not available.
- Vapor pressure** : Not available.

Cobalt Metal

SECTION 9: Physical and chemical properties

Relative density	: 8.92
Density	: 8.9 g/cm ³
Vapor density	: Not applicable.
Explosive properties	: Not available.
Oxidizing properties	: Not available.
<u>Particle characteristics</u>	
Median particle size	: Not available.
Specific surface area	: <670 mm ² /g
Percentage of particles with aerodynamic diameter ≤ 10 µm	: 0
Additional information	: thickness: 8-12 mm; dia: 18 -24 mm

9.2 Other information

Molecular weight	: 58.93 g/mole
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SECTION 10: Stability and reactivity

10.1 Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: The product is stable.
10.3 Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: No specific data.
10.5 Incompatible materials	: No specific data.
10.6 Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
cobalt	LD50 Oral	Rat	550 mg/kg	-

Conclusion/Summary : Harmful if swallowed.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
cobalt	550	N/A	N/A	N/A	N/A

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitization

Cobalt Metal

SECTION 11: Toxicological information

Product/ingredient name	Route of exposure	Species	Result
cobalt	Respiratory	Mammal - species unspecified	Sensitizing
	skin	Mammal - species unspecified	Sensitizing

Conclusion/Summary

- Skin** : May cause an allergic skin reaction.
Respiratory : May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Cobalt			

- Conclusion/Summary** : Suspected of causing genetic defects.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Cobalt				

- Conclusion/Summary** : May cause cancer.

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Cobalt						

- Conclusion/Summary** : May damage fertility.

Teratogenicity

- Conclusion/Summary** : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

- Information on the likely routes of exposure** : Not available.

Potential acute health effects

- Eye contact** : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
Inhalation : Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Skin contact : May cause an allergic skin reaction.
Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
 irritation
 redness

Cobalt Metal

SECTION 11: Toxicological information

- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Not available.

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : Suspected of causing genetic defects.

Reproductive toxicity : May damage fertility.

11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

Not available.

11.2.2 Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
cobalt	Acute LC50 4400 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 3.4 mg/l Fresh water	Fish - Pimephales promelas	96 hours

Conclusion/Summary : May cause long lasting harmful effects to aquatic life.

12.2 Persistence and degradability

Cobalt Metal

SECTION 12: Ecological information

Conclusion/Summary : Not available.

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
cobalt	-	15600	high

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
cobalt	Not applicable (Inorganic)	N/A	N/A	N/A	Not applicable (Inorganic)	N/A	N/A

12.6 Endocrine disrupting properties

None identified.

12.7 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Cobalt Metal

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number or ID number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Maritime transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Restricted to professional users.

Other EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Industrial emissions (integrated pollution prevention and control) - Water : Listed

Ozone depleting substances (1005/2009/EU)

Not listed.

Prior Informed Consent (PIC) (649/2012/EU)

Not listed.

Cobalt Metal

SECTION 15: Regulatory information

Persistent Organic Pollutants

Not listed.

Seveso Directive

This product is not controlled under the Seveso Directive.

National regulations

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia	:	This material is listed or exempted.
Canada	:	This material is listed or exempted.
China	:	This material is listed or exempted.
Eurasian Economic Union	:	Russian Federation inventory: This material is listed or exempted.
Japan	:	Japan inventory (CSCL): Not determined. Japan inventory (ISHL): Not determined.
New Zealand	:	This material is listed or exempted.
Philippines	:	This material is listed or exempted.
Republic of Korea	:	This material is listed or exempted.
Taiwan	:	This material is listed or exempted.
Thailand	:	This material is listed or exempted.
Turkey	:	This material is listed or exempted.
United States	:	This material is active or exempted.
Viet Nam	:	This material is listed or exempted.

15.2 Chemical Safety Assessment : Not available.

SECTION 16: Other information

🔍 Indicates information that has changed from previously issued version.

Abbreviations and acronyms	:	ATE = Acute Toxicity Estimate CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008] DMEL = Derived Minimal Effect Level DNEL = Derived No Effect Level EUH statement = CLP-specific Hazard statement N/A = Not available PBT = Persistent, Bioaccumulative and Toxic PNEC = Predicted No Effect Concentration RRN = REACH Registration Number SGG = Segregation Group vPvB = Very Persistent and Very Bioaccumulative
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Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Cobalt Metal

SECTION 16: Other information

Classification	Justification
Carc. 1B, H350 Muta. 2, H341 Repr. 1B, H360F Acute Tox. 4, H302 Resp. Sens. 1, H334 Skin Sens. 1, H317 Aquatic Chronic 4, H413	Regulatory data Regulatory data Regulatory data On basis of test data Regulatory data Regulatory data

Full text of abbreviated H statements

H302	Harmful if swallowed.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H360F	May damage fertility.
H413	May cause long lasting harmful effects to aquatic life.

Full text of classifications [CLP/GHS]

Acute Tox. 4	ACUTE TOXICITY - Category 4
Carc. 1B	CARCINOGENICITY - Category 1B
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Repr. 1B	TOXIC TO REPRODUCTION - Category 1B
Resp. Sens. 1	RESPIRATORY SENSITIZATION - Category 1
Skin Sens. 1	SKIN SENSITIZATION - Category 1
Aquatic Chronic 4	Aquatic Toxicity - Category 4

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.