

SAFETY DATA SHEET

LaserForm CoCrF75 (A)

Section 1. Identification

- GHS product identifier** : LaserForm CoCrF75 (A)
- Other means of identification** : Not available.
- Product use** : For use with 3D Systems' Direct Metal Printing equipment.
- Supplier's details** : 3D Systems, Inc.
333 Three D Systems Circle
Rock Hill, South Carolina, USA
- Phone: +1 803 326 3900 or
Toll-free Phone: +1 800 793 3669
- e-mail address of person responsible for this SDS** : moreinfo@3dsystems.com
- Emergency telephone number (with hours of operation)** : + 1 703 527 3887 (Chemtrec, worldwide)

Section 2. Hazards identification

- OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
- Classification of the substance or mixture** : COMBUSTIBLE DUSTS
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION - Category 1B

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Harmful if swallowed or if inhaled.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
Suspected of causing genetic defects.
May cause cancer.
May damage fertility.
May form combustible dust concentrations in air.

Precautionary statements

Section 2. Hazards identification

- Prevention** : Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves. Wear eye or face protection. Wear protective clothing. Wear respiratory protection.
Use only outdoors or in a well-ventilated area.
Avoid breathing dust.
Wash hands thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
- Response** : IF exposed or concerned: Get medical advice or attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor. IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: 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.
- Supplemental label elements** : Keep container tightly closed. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Prevent dust accumulation.
- Hazards not otherwise classified** : None known.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture
- Other means of identification** : Not available.

Ingredient name	%	CAS number
cobalt	≥50 - ≤75	7440-48-4
chromium	≥25 - ≤50	7440-47-3
molybdenum	≤10	7439-98-7
manganese	≤1	7439-96-5
silicon	≤1	7440-21-3
nickel powder	<0.1	7440-02-0

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

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

Section 4. First aid measures

Description of necessary 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.

Section 4. First aid measures

- 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled. 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.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
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

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Section 4. First aid measures

- Specific treatments** : No specific treatment.
- 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use approved Class D extinguisher or smother with dry sand, dry clay or dry ground limestone. Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : CO₂, water, ABC powder and foam.

Specific hazards arising from the chemical : May form explosible dust-air mixture if dispersed.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
metal oxide/oxides

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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

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.

Remark : Non-flammable.

Remark (Explosibility) : May form explosible dust-air mixture if dispersed.

Section 6. Accidental release measures

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. 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".

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).

Methods and materials for containment and cleaning up

Small spill : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Do not dry sweep. Use only vacuum cleaners equipped with a wet separator system and a grounding cable (ATEX, Hazardous locations certified / Suitable for use with Group E (IIIC) Conductive Dusts / Suitable for use in Class 2, Division II (Zone 22) locations or better). Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Section 6. Accidental release measures

- Large spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Use only vacuum cleaners equipped with a wet separator system and a grounding cable (ATEX, Hazardous locations certified / Suitable for use with Group E (IIIC) Conductive Dusts / Suitable for use in Class 2, Division II (Zone 22) locations or better). Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

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. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. 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. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. 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.

- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
cobalt	<p>NIOSH REL (United States, 10/2020). TWA: 0.05 mg/m³, (as Co) 10 hours. Form: Dust and fumes</p> <p>ACGIH TLV (United States, 1/2021). Skin sensitizer. Inhalation sensitizer. TWA: 0.02 mg/m³, (as Co) 8 hours. TWA: 0.005 mg/m³ 8 hours. Form: Thoracic fraction</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 0.05 mg/m³, (as Co) 8 hours.</p> <p>OSHA PEL (United States, 5/2018). TWA: 0.1 mg/m³, (as Co) 8 hours.</p>

Section 8. Exposure controls/personal protection

chromium	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m³ 8 hours.</p> <p>ACGIH TLV (United States, 1/2021). TWA: 0.5 mg/m³, (measured as Cr) 8 hours. Form: Inhalable fraction</p> <p>NIOSH REL (United States, 10/2020). TWA: 0.5 mg/m³ 8 hours.</p> <p>OSHA PEL (United States, 5/2018). TWA: 1 mg/m³, (as Cr) 8 hours.</p>
molybdenum	<p>ACGIH TLV (United States, 1/2021). TWA: 10 mg/m³, (as Mo) 8 hours. Form: Inhalable fraction TWA: 3 mg/m³, (as Mo) 8 hours. Form: Respirable fraction</p>
manganese	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m³, (as Mn) 8 hours. Form: Fume STEL: 3 mg/m³, (as Mn) 15 minutes. Form: Fume</p> <p>NIOSH REL (United States, 10/2020). TWA: 1 mg/m³, (as Mn) 10 hours. Form: Fume STEL: 3 mg/m³, (as Mn) 15 minutes. Form: Fume</p> <p>OSHA PEL (United States, 5/2018). CELL: 5 mg/m³, (as Mn) Form: Fume</p> <p>ACGIH TLV (United States, 1/2021). TWA: 0.1 mg/m³, (as Mn) 8 hours. Form: Inhalable fraction TWA: 0.02 mg/m³, (as Mn) 8 hours. Form: Respirable fraction</p>
silicon	<p>OSHA PEL 1989 (United States, 3/1989). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust</p> <p>NIOSH REL (United States, 10/2020). TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total dust</p> <p>OSHA PEL (United States, 5/2018). TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust</p>
nickel powder	<p>ACGIH TLV (United States, 1/2021). TWA: 1.5 mg/m³ 8 hours. Form: Inhalable fraction</p> <p>OSHA PEL 1989 (United States, 3/1989). TWA: 1 mg/m³, (as Ni) 8 hours.</p> <p>NIOSH REL (United States, 10/2020). TWA: 0.015 mg/m³, (as Ni) 10 hours.</p> <p>OSHA PEL (United States, 5/2018). TWA: 1 mg/m³, (as Ni) 8 hours.</p>

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Section 8. Exposure controls/personal protection

- 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.
- Individual protection measures**
- Hygiene measures** : Do not blow dust off clothing or skin with compressed air. 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.
- 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: chemical splash goggles. 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.
For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- 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.
Recommended: Ensure an MSHA/NIOSH-approved respirator or equivalent is used. (Class N99)

Section 9. Physical and chemical properties

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

Appearance

- Physical state** : Solid. [Powder. particle size: 100% <100 µm]
- Color** : Dark grey.
- Odor** : Odorless.
- Odor threshold** : Not applicable.
- pH** : Not applicable.
- Melting point/freezing point** : 1315 to 1540°C (2399 to 2804°F)
- Boiling point, initial boiling point, and boiling range** : Not available.
- Flash point** : Not applicable.
- Evaporation rate** : Not available.
- Flammability** : Non-flammable.

Section 9. Physical and chemical properties

Lower and upper explosion limit/flammability limit	: Not applicable.
Vapor pressure	: Not available.
Relative vapor density	: Not applicable.
Relative density	: Not available.
Density	: 8.4 g/cm ³
Solubility	: Not available.
Solubility in water	: Insoluble.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not self-ignitable.
Decomposition temperature	: Not applicable.
Viscosity	: Not applicable.
Explosive properties	: May form explosible dust-air mixture if dispersed.
Particle characteristics	
Median particle size	: Not available.

Section 10. Stability and reactivity

Reactivity	: Under normal conditions of storage and use, hazardous reactions will not occur.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: May form explosible dust-air mixture if dispersed.
Conditions to avoid	: Keep away from heat, sparks and flame. Avoid dust generation. Avoid static electrical charge
Incompatible materials	: Reactive or incompatible with the following materials: alkalis, acids, oxidizing materials, halogenated hydrocarbons, combustible materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Conclusion/Summary : Harmful if swallowed or if inhaled.

Irritation/Corrosion

Conclusion/Summary

Eyes : Causes serious eye irritation.

Sensitization

Conclusion/Summary

Skin : May cause an allergic skin reaction.

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

Mutagenicity

Conclusion/Summary : Suspected of causing genetic defects.

Carcinogenicity

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
nickel powder	Positive - Inhalation	Rat - Male, Female	0.4 mg/m ³ NOAEL	24 months; 6 hours per day

Conclusion/Summary : May cause cancer.

Classification

Product/ingredient name	OSHA	IARC	NTP
cobalt	-	2B	Reasonably anticipated to be a human carcinogen.
chromium	-	3	-
nickel powder	-	2B	-

Reproductive toxicity

Conclusion/Summary : May damage fertility.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
nickel powder	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Harmful if inhaled. 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:
pain or irritation
watering
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

Section 11. Toxicological information

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

Product/ingredient name	Result	Species	Dose	Exposure
nickel powder	Chronic LOAEL Inhalation Dusts and mists	Rat - Male, Female	0.1 mg/m ³	24 months; 6 hours per day

Conclusion/Summary : Based on available data, the classification criteria are not met.

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.

Numerical measures of toxicity

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)
LaserForm CoCrF75 (A)	841.6	N/A	N/A	N/A	2.5
cobalt	500	N/A	N/A	N/A	1.5

Section 12. Ecological information

Toxicity

Conclusion/Summary : Very toxic to aquatic life with long lasting effects.

Persistence and degradability

Conclusion/Summary : The methods for determining the biological degradability are not applicable to inorganic substances.

Bioaccumulative potential

Not available.

Mobility in soil

Section 12. Ecological information













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

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. 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.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification	ADR/RID	IMDG	IATA
UN number	UN3077	UN3077	UN3077	UN3077	UN3077	UN3077
UN proper shipping name	Environmentally hazardous substance, solid, n.o.s. (cobalt)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cobalt)	SUBSTANCIA SOLIDA POTENCIALMENTE PELIGROSA PARA EL MEDIO AMBIENTE, N. E.P. (cobalt)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cobalt)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cobalt)	Environmentally hazardous substance, solid, n.o.s. (cobalt)
Transport hazard class(es)	9	9	9	9	9	9
Label	 	 	 	 	 	 
Packing group	III	III	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.	Marine Pollutant: Yes	Yes.

Additional information

DOT Classification : Non-bulk packages of this product are not regulated as hazardous materials in package sizes less than the product reportable quantity, unless transported by inland waterway. The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg.
Reportable quantity 16666.7 lbs / 7566.7 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.
Limited quantity Yes.
Packaging instruction Exceptions: 155. Non-bulk: 213. Bulk: 240.

Section 14. Transport information

- TDG Classification** : **Special provisions** 8, 146, 335, 384, A112, B54, B120, IB8, IP3, N20, N91, T1, TP33
 Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).
 Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
Explosive Limit and Limited Quantity Index 5
Special provisions 16, 99
- Mexico Classification** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Special provisions 274, 331, 335
- ADR/RID** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Hazard identification number 90
Limited quantity 5 kg
Special provisions 274, 335, 601, 375
- IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F
Special provisions 274, 335, 966, 967, 969
- IATA** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Quantity limitation Passenger and Cargo Aircraft: 400 kg. Packaging instructions: 956. Cargo Aircraft Only: 400 kg. Packaging instructions: 956. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y956.
Special provisions A97, A158, A179, A197, A215
- 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.
- Transport in bulk according to IMO instruments** : Not applicable.

Section 15. Regulatory information

- U.S. Federal regulations** : **TSCA 8(a) PAIR:** tungsten
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
Clean Water Act (CWA) 307: chromium; nickel powder
- Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed
- Clean Air Act Section 602 Class I Substances** : Not listed
- Clean Air Act Section 602 Class II Substances** : Not listed
- DEA List I Chemicals (Precursor Chemicals)** : Not listed
- DEA List II Chemicals (Essential Chemicals)** : Not listed
- SARA 302/304**
Composition/information on ingredients

No products were found.

Section 15. Regulatory information

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : COMBUSTIBLE DUSTS
 ACUTE TOXICITY (oral) - Category 4
 ACUTE TOXICITY (inhalation) - Category 4
 EYE IRRITATION - Category 2A
 RESPIRATORY SENSITIZATION - Category 1
 SKIN SENSITIZATION - Category 1
 GERM CELL MUTAGENICITY - Category 2
 CARCINOGENICITY - Category 1B
 TOXIC TO REPRODUCTION - Category 1B

Composition/information on ingredients

Name	%	Classification
<input checked="" type="checkbox"/> Cobalt	≥50 - ≤75	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 GERM CELL MUTAGENICITY - Category 2 CARCINOGENICITY - Category 1B TOXIC TO REPRODUCTION - Category 1B
nickel powder	<0.1	SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	<input checked="" type="checkbox"/> Cobalt	7440-48-4	≥50 - ≤75
	chromium	7440-47-3	≥25 - ≤50
Supplier notification	<input checked="" type="checkbox"/> Cobalt	7440-48-4	≥50 - ≤75
	chromium	7440-47-3	≥25 - ≤50

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: COBALT; CHROMIUM; MOLYBDENUM
New York : The following components are listed: Chromium
New Jersey : The following components are listed: COBALT; CHROMIUM; MOLYBDENUM
Pennsylvania : The following components are listed: COBALT FUME; CHROMIUM COMPOUNDS; MOLYBDENUM

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including Cobalt metal powder and Nickel, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
<input checked="" type="checkbox"/> Cobalt metal powder	-	-
Nickel	-	-

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Section 15. Regulatory information

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	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: All components are listed or exempted.
United States	: All components are active or exempted.
Viet Nam	: All components are listed or exempted.

Section 16. Other information

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
COMBUSTIBLE DUSTS	Expert judgment
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
EYE IRRITATION - Category 2A	Calculation method
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
GERM CELL MUTAGENICITY - Category 2	Calculation method
CARCINOGENICITY - Category 1B	Calculation method
TOXIC TO REPRODUCTION - Category 1B	Calculation method

History

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Key to abbreviations : ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 DOT = Department of Transportation
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods

Section 16. Other information

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

N/A = Not available

RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail

SGG = Segregation Group

TDG = Transportation of Dangerous Goods

UN = United Nations

References

: Not available.

✔ Indicates information that has changed from previously issued version.

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