



# CEMENTED TUNGSTEN CARBIDE CUTTING TOOLS; ALTIM NANO COATED; SDS GROUP 17

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations And According To The Hazardous Products Regulation (February 11, 2015).

Date of Issue: 01/28/2020

Version: 1.0

## SECTION 1: IDENTIFICATION

### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** CEMENTED TUNGSTEN CARBIDE CUTTING TOOLS; ALTIM NANO COATED; SDS GROUP 17

This product covers solid metal blanks for manufacturing cutting tools, this SDS and the hazards and information described below apply to this product if the materials contained within the cutting tool(s) become available during processing conditions, including dust and particulates.

### 1.2. Intended Use of the Product

Cutting Tools for manufacturing industries. When used as intended, this product is physiologically inert. Do not modify or resharpen product; return tools to Harvey Tool Company for alteration.

### 1.3. Name, Address, and Telephone of the Responsible Party

#### Company

Harvey Tool Company, LLC  
428 Newburyport Turnpike  
Rowley, MA 01969  
800-645-5609

[Harveysales@harveyperformance.com](mailto:Harveysales@harveyperformance.com)

### 1.4. Emergency Telephone Number

**Emergency Number** : Within USA and Canada: 1-800-424-9300 or +1-703-527-3887 (collect calls accepted)

For Chemical Emergency, Spill, Leak, Fire, Exposure, or Accident, call CHEMTREC – Day or Night

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1. Classification of the Substance or Mixture

#### GHS-US/CA Classification

Acute Tox. 4 (Oral)	H302
Resp. Sens. 1B	H334
Skin Sens. 1	H317
Carc. 1	H350
Repr. 2	H361
STOT RE 1	H372
Aquatic Acute 2	H401
Aquatic Chronic 4	H413
Comb. Dust	

Full text of hazard classes and H-statements : see section 16

### 2.2. Label Elements

#### GHS-US/CA Labeling

##### Hazard Pictograms (GHS-US/CA)



##### Signal Word (GHS-US/CA)

: Danger

##### Hazard Statements (GHS-US/CA)

: May form combustible dust concentrations in air.  
H302 - Harmful if swallowed.  
H317 - May cause an allergic skin reaction.  
H334 - May cause an allergy or asthma symptoms or breathing difficulties if inhaled.  
H350 - May cause cancer.  
H361 - Suspected of damaging fertility or the unborn child.  
H372 - Causes damage to organs through prolonged or repeated exposure.

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- H401 - Toxic to aquatic life.  
H413 - May cause long lasting harmful effects to aquatic life.
- Precautionary Statements (GHS-US/CA) :** P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P260 - Do not breathe vapors, mist, or spray.  
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P272 - Contaminated work clothing should not be allowed out of the workplace.  
P273 - Avoid release to the environment.  
P280 - Wear protective gloves, protective clothing, and eye protection.  
P284 - [In case of inadequate ventilation] wear respiratory protection.  
P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.  
P302+P352 - IF ON SKIN: Wash with plenty of water.  
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P314 - Get medical advice/attention if you feel unwell.  
P321 - Specific treatment (see section 4 on this SDS).  
P330 - Rinse mouth.  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
P342+P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P405 - Store locked up.  
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial and international regulations.
- Supplemental Information :** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Proper grounding procedures to avoid static electricity should be followed. Prevent dust accumulation (to minimize explosion hazard). Avoid generating dust.

### 2.3. Other Hazards

Exposure may aggravate pre-existing eye, skin, or respiratory conditions. Contains substances that are combustible dusts. If dried and allowed to accumulate, may form combustible dust concentrations in air that could ignite and cause an explosion. Take appropriate precautions. This product contains components that are environmentally hazardous and small chips, fine turnings, and dust from processing may be toxic to aquatic life.

### 2.4. Unknown Acute Toxicity (GHS-US/CA)

No data available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substance

Not applicable

### 3.2. Mixture

Name	Synonyms	Product Identifier	% *	GHS Ingredient Classification
Tungsten	Tungsten, elemental / Tungsten, metal / Tungsten metal / Tungsten trioxide	(CAS-No.) 7440-33-7	49.95 - 97.902	Comb. Dust
Cobalt	Cobalt metal / Cobalt, elemental / C.I. 77320 / Cobalt metallic	(CAS-No.) 7440-48-4	0.999 - 29.97	Acute Tox. 4 (Oral), H302 Resp. Sens. 1B, H334 Skin Sens. 1, H317 Carc. 1B, H350 Repr. 2, H361 Aquatic Chronic 4, H413
Tantalum carbide (TaC)	Tantalum carbide	(CAS-No.) 12070-06-3	< 14.985	Not classified
Chromium	Chromium metal / Chromium, elemental / Chromium, metal	(CAS-No.) 7440-47-3	5.01 - 5.03	Comb. Dust

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	/ Chromium, metallic / Chrome, metal / Chrome			
Tantalum	Tantalum metal / Tantalum, elemental / Tantalum, metal	(CAS-No.) 7440-25-7	< 4.995	Not classified
Nickel	Nickel metal / Nickel, elemental / Nickel, metallic / Nickel, metal / C.I. 77775	(CAS-No.) 7440-02-0	< 4.995	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 1, H400 Aquatic Chronic 3, H412 Comb. Dust
Nitrogen	Nitrogen (liquified) / Nitrogen gas / Nitrogen, liquefied / NITROGEN / Nitrogen, compressed	(CAS-No.) 7727-37-9	0.025 - 0.05	Simple Asphy Press. Gas (Comp.), H280
Titanium	Titanium powder, dry / Titanium sponge powders / Titanium powder, wetted / Titanium powder	(CAS-No.) 7440-32-6	0.015 - 0.035	Comb. Dust
Aluminum	Aluminium powder (stabilized) / Aluminium powder / Aluminum (metal) / CI 77000 / C.I. 77000 / Aluminum, metal / Aluminum, elemental / Aluminum metal / Aluminium, metal / Aluminium metal / Aluminium / Aluminium metal, powder / Aluminium powders / Aluminium powder (stabilised) / Pigment Metal 1 / Aluminum powder	(CAS-No.) 7429-90-5	0.015 - 0.035	Comb. Dust
Silicon	Silicon powder / Silicon powder, amorphous / Ammonium hexafluorosilicate	(CAS-No.) 7440-21-3	0.005 - 0.01	Comb. Dust

Full text of H-phrases: see section 16

\*Percentages are listed in weight by weight percentage (w/w%) for liquid and solid ingredients. Gas ingredients are listed in volume by volume percentage (v/v%).

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of First-aid Measures

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

**Inhalation:** Using proper respiratory protection, move the exposed person to fresh air at once. Encourage exposed person to cough, spit out, and blow nose to remove dust. Immediately call a poison center, physician, or emergency medical service.

**Skin Contact:** Remove contaminated clothing. Drench affected area with water for at least 15 minutes. If exposed or concerned: Get medical advice/attention. Obtain medical attention if irritation/rash develops or persists.

**Eye Contact:** Remove contact lenses, if present and easy to do. Continue rinsing. Rinse cautiously with water for at least 15 minutes. Obtain medical attention.

**Ingestion:** Rinse mouth. Do NOT induce vomiting. Obtain medical attention.

### 4.2. Most Important Symptoms and Effects Both Acute and Delayed

**General:** The health effects listed below are not likely to occur unless dust or fumes are generated by processing. Harmful if swallowed. Skin sensitization. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause cancer. May cause damage to organs through prolonged or repeated exposure. Suspected of damaging fertility or the unborn child. Final product may have sharp edges.

**Inhalation:** Exposure may produce cough, mucous secretions, shortness of breath, chest tightness or other symptoms indicative of an allergic/sensitization reaction. Dust may be harmful or cause irritation. Inhalation of dust may cause pulmonary fibrosis.

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**Skin Contact:** May cause an allergic skin reaction. Contact with hot, molten metal will cause thermal burns. Mechanical damage via flying particles and chipped slag is possible.

**Eye Contact:** During metal processing, dusts caused from milling and physical alteration will likely cause eye irritation. Fumes from thermal decomposition or molten material will likely be irritating to the eyes.

**Ingestion:** For particulates and dust: This material is harmful orally and can cause adverse health effects or death in significant amounts.

**Chronic Symptoms:** May cause cancer. May cause damage to organs through prolonged or repeated exposure. Suspected of damaging fertility or the unborn child.

Aluminum: Inhalation of finely divided aluminum powder may cause pulmonary fibrosis.

Cobalt: Chronic exposure to cobalt-containing hard metal (dust or fume) can result in a serious lung disease called "hard metal lung disease", which is a type of pneumoconiosis (lung fibrosis).

Chromium: Certain hexavalent chromium compounds have been demonstrated to be carcinogenic on the basis of epidemiological investigations on workers and experimental studies in animals. Increased incidences of respiratory cancer have been found in chromium (VI) workers. There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to IARC volume 23 for a more detailed discussion.

Repeated exposure to tantalum alloys may cause fibrosis, chronic rhinitis and "hard metal pneumoconiosis".

Nickel: May cause a form of dermatitis known as nickel itch and intestinal irritation, which may cause disorders, convulsions and asphyxia. Nickel metal powder, when respirable, is a suspected human carcinogen, and is known to cause damage to the lungs through inhalation.

Silicon: Can cause chronic bronchitis and narrowing of the airways.

#### 4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand.

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Use class D extinguishing media on fines, dust, or molten metal. Use water spray on chips and fines.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire. Do not use water when molten material is involved, may react violently or explosively on contact with water.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Combustible Dust. Metallic dusts may ignite or explode.

**Explosion Hazard:** Dust explosion hazard in air. If excessive dust is generated from processing, it may present a dust explosion hazard when dispersed in air at sufficient quantities in the presence of an ignition source.

**Reactivity:** Hazardous reactions will not occur under normal conditions.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Firefighting Instructions:** Use water spray or fog for cooling exposed containers.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** Metal oxides.

**Other Information:** Do not allow run-off from fire fighting to enter drains or water courses. Risk of dust explosion.

### 5.4. Reference to Other Sections

Refer to Section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Do not get in eyes, on skin, or on clothing. Do not breathe dust. Avoid generating dust. Keep away from heat, hot surfaces, sparks, open flames, and other ignition sources. No smoking. Do not handle until all safety precautions have been read and understood. Remove ignition sources.

#### 6.1.1. For Non-Emergency Personnel

**Protective Equipment:** Use appropriate personal protective equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection.

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**Emergency Procedures:** Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit. Ventilate area.

#### 6.2. Environmental Precautions

Prevent entry to sewers and public waters. Avoid release to the environment.

#### 6.3. Methods and Materials for Containment and Cleaning Up

**For Containment:** Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. Avoid generation of dust during clean-up of spills.

**Methods for Cleaning Up:** Clean up spills immediately and dispose of waste safely. Use explosion proof vacuum during cleanup, with appropriate filter. Do not mix with other materials. Vacuum clean-up is preferred. If sweeping is required use a dust suppressant. Use only non-sparking tools. Contact competent authorities after a spill.

#### 6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

## SECTION 7: HANDLING AND STORAGE

#### 7.1. Precautions for Safe Handling

**Additional Hazards When Processed:** This product is physiologically inert in its massive form. However, user-generated dust and/or fumes may pose a physiological hazard if inhaled or ingested. Avoid inhalation of metal dusts and fumes. May cause an influenza-like illness. Avoid skin and eye contact with dusts to prevent mechanical irritation. User-generated dust is easily ignited and difficult to extinguish. Accumulation and dispersion of dust with an ignition source can cause a combustible dust explosion. Keep dust levels to a minimum and follow applicable regulations.

**Precautions for Safe Handling:** Do not breathe dust. Do not get in eyes, on skin, or on clothing. Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Avoid creating or spreading dust. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Handle empty containers with care because they may still present a hazard. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures.

#### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Technical Measures:** Comply with applicable regulations. Avoid creating or spreading dust. Use explosion-proof electrical, ventilating, lighting equipment. Proper grounding procedures to avoid static electricity should be followed.

**Storage Conditions:** Keep container closed when not in use. Keep/Store away from direct sunlight, extremely high or low temperatures and incompatible materials. Store in a dry, cool place. Store locked up/in a secure area.

**Incompatible Materials:** Strong acids, strong bases, strong oxidizers.

#### 7.3. Specific End Use(s)

Blank for Manufacturing Cutting Tools. When used as intended, this product is physiologically inert. Do not modify or resharpen product; return tools to Harvey Tool Company for alteration.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

#### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), AIHA (WEEL), NIOSH (REL), OSHA (PEL), or Canadian provincial governments.

Tungsten (7440-33-7)		
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (respirable particulate matter)
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
USA NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Alberta	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Alberta	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
British Columbia	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
Manitoba	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (respirable particulate matter)
Newfoundland & Labrador	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (respirable particulate matter)
Nova Scotia	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (respirable particulate matter)

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<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Ontario</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Ontario</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Prince Edward Island</b>	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (respirable particulate matter)
<b>Saskatchewan</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Tantalum (7440-25-7)</b>		
<b>USA OSHA</b>	OSHA PEL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (dust)
<b>USA NIOSH</b>	NIOSH REL (STEL) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (dust)
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	2500 mg/m <sup>3</sup> (dust)
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (dust)
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (dust)
<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (metal)
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (metal)
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (metal)
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (metal)
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup> (dust)
<b>Saskatchewan</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Chromium (7440-47-3)</b>		
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>USA OSHA</b>	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	250 mg/m <sup>3</sup>
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup> (total)
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (metal)
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup> (metal)
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (metal)
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup> (metal)
<b>Ontario</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
<b>Prince Edward Island</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL STEL (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	0.5 mg/m <sup>3</sup>
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup>

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<b>Nickel (7440-02-0)</b>		
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>USA ACGIH</b>	ACGIH chemical category	Not Suspected as a Human Carcinogen
<b>USA OSHA</b>	OSHA PEL (TWA) (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.015 mg/m <sup>3</sup>
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup>
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (inhalable fraction)
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (inhalable fraction)
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (inhalable fraction)
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (inhalable fraction)
<b>Ontario</b>	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (inhalable)
<b>Prince Edward Island</b>	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (inhalable fraction)
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	1.5 mg/m <sup>3</sup> (inhalable fraction)
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup>
<b>Tungsten, insoluble compounds</b>		
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>USA NIOSH</b>	NIOSH REL (STEL) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Alberta</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Ontario</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Ontario</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Québec</b>	VECD (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Yukon</b>	OEL STEL (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
<b>Yukon</b>	OEL TWA (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
<b>Tungsten compounds</b>		
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (in the absence of cobalt-respirable particulate matter)
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (in the absence of Cobalt-respirable particulate matter)

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<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (in the absence of Cobalt-respirable particulate matter)
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (in the absence of Cobalt-respirable particulate matter)
<b>Prince Edward Island</b>	OEL TWA (mg/m <sup>3</sup> )	3 mg/m <sup>3</sup> (in the absence of Cobalt-respirable particulate matter)
<b>Cobalt inorganic compounds</b>		
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
<b>USA ACGIH</b>	ACGIH chemical category	dermal sensitizer, Confirmed Animal Carcinogen with Unknown Relevance to Humans
<b>USA ACGIH</b>	Biological Exposure Indices (BEI)	15 µg/l Parameter: Cobalt - Medium: urine - Sampling time: end of shift at end of workweek (nonspecific)
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	0.06 mg/m <sup>3</sup>
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	0.06 mg/m <sup>3</sup>
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
<b>Ontario</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
<b>Prince Edward Island</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
<b>Québec</b>	VEMP (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL STEL (mg/m <sup>3</sup> )	0.06 mg/m <sup>3</sup>
<b>Saskatchewan</b>	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
<b>Nickel compounds</b>		
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.015 mg/m <sup>3</sup> (except Nickel carbonyl)
<b>USA IDLH</b>	US IDLH (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (except Nickel carbonyl)
<b>Nitrogen (7727-37-9)</b>		
<b>USA ACGIH</b>	ACGIH chemical category	Simple asphyxiant See Appendix F: Minimal Oxygen Content
<b>Aluminum (7429-90-5)</b>		
<b>USA ACGIH</b>	ACGIH TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>USA ACGIH</b>	ACGIH chemical category	Not Classifiable as a Human Carcinogen
<b>USA OSHA</b>	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
<b>USA NIOSH</b>	NIOSH REL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable dust)
<b>Alberta</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (dust)
<b>British Columbia</b>	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable)
<b>Manitoba</b>	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>New Brunswick</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (metal dust)
<b>Newfoundland &amp; Labrador</b>	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nova Scotia</b>	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable particulate matter)
<b>Nunavut</b>	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (metal-dust)
<b>Nunavut</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (metal-dust)
<b>Northwest Territories</b>	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (metal-dust)
<b>Northwest Territories</b>	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (metal-dust)



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Ontario	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable)
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	1 mg/m <sup>3</sup> (respirable particulate matter)
Québec	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Saskatchewan	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (dust)
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (dust)
<b>Silicon (7440-21-3)</b>		
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	15 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust) 5 mg/m <sup>3</sup> (respirable dust)
British Columbia	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (total dust) 3 mg/m <sup>3</sup> (respirable fraction)
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Nunavut	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
Nunavut	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Northwest Territories	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Québec	VEMP (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup> (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	10 mg/m <sup>3</sup>
Yukon	OEL STEL (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup>
Yukon	OEL TWA (mg/m <sup>3</sup> )	30 mppcf 10 mg/m <sup>3</sup>
<b>Cobalt (7440-48-4)</b>		
USA ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
USA ACGIH	ACGIH chemical category	dermal sensitizer, Confirmed Animal Carcinogen with Unknown Relevance to Humans
USA ACGIH	Biological Exposure Indices (BEI)	15 µg/l Parameter: Cobalt - Medium: urine - Sampling time: end of shift at end of workweek (nonspecific)
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	0.1 mg/m <sup>3</sup> (dust and fume)
USA NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (dust and fume)
USA IDLH	US IDLH (mg/m <sup>3</sup> )	20 mg/m <sup>3</sup> (dust and fume)
Alberta	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
British Columbia	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
Manitoba	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
New Brunswick	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
Newfoundland & Labrador	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
Nova Scotia	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
Nunavut	OEL STEL (mg/m <sup>3</sup> )	0.06 mg/m <sup>3</sup>
Nunavut	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
Northwest Territories	OEL STEL (mg/m <sup>3</sup> )	0.06 mg/m <sup>3</sup>
Northwest Territories	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
Ontario	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
Prince Edward Island	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup> (inhalable particulate matter)
Québec	VEMP (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
Saskatchewan	OEL STEL (mg/m <sup>3</sup> )	0.06 mg/m <sup>3</sup>
Saskatchewan	OEL TWA (mg/m <sup>3</sup> )	0.02 mg/m <sup>3</sup>
Yukon	OEL STEL (mg/m <sup>3</sup> )	0.15 mg/m <sup>3</sup> (dust and fume)
Yukon	OEL TWA (mg/m <sup>3</sup> )	0.05 mg/m <sup>3</sup> (dust and fume)

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### 8.2. Exposure Controls

**Appropriate Engineering Controls:** It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices. Suitable eye/body wash equipment should be available in the vicinity of any potential exposure. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Ensure adequate ventilation, especially in confined areas. Ensure all national/local regulations are observed.

**Personal Protective Equipment:** Gloves. Protective clothing. Protective goggles. Insufficient ventilation: wear respiratory protection.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics.

**Hand Protection:** Wear protective gloves.

**Eye and Face Protection:** Chemical safety goggles.

**Skin and Body Protection:** Wear suitable protective clothing.

**Respiratory Protection:** If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn. In case of inadequate ventilation, oxygen deficient atmosphere, or where exposure levels are not known wear approved respiratory protection.

**Other Information:** When using, do not eat, drink or smoke.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Grey w/ Dark Grey Coat
Odor	: Odorless
Odor Threshold	: Not available
pH	: Not available
Evaporation Rate	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: Not available
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20°C	: Not available
Relative Density	: Not available
Density	: 15.7 g/cm <sup>3</sup>
Specific Gravity	: Not available
Solubility	: Water: Insoluble
Partition Coefficient: N-Octanol/Water	: Not available
Viscosity	: Not available

## SECTION 10: STABILITY AND REACTIVITY

**10.1. Reactivity:** Hazardous reactions will not occur under normal conditions.

**10.2. Chemical Stability:** Stable under recommended handling and storage conditions (see section 7).

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- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Direct sunlight, extremely high or low temperatures, and incompatible materials. Sparks, heat, open flame and other sources of ignition. Dust accumulation (to minimize explosion hazard).
- 10.5. Incompatible Materials:** Strong acids, strong bases, strong oxidizers.
- 10.6. Hazardous Decomposition Products:** Not expected to decompose under ambient conditions. Thermal decomposition generates : Metal oxides. Toxic fumes.

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1. Information on Toxicological Effects - Product

**Acute Toxicity (Oral):** Harmful if swallowed.

**Acute Toxicity (Dermal):** Not classified

**Acute Toxicity (Inhalation):** Not classified

**LD50 and LC50 Data:**

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ATE US/CA (oral)	720.37 mg/kg body weight

**Skin Corrosion/Irritation:** Not classified

**Eye Damage/Irritation:** Not classified

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

**Germ Cell Mutagenicity:** Not classified

**Carcinogenicity:** May cause cancer.

**Specific Target Organ Toxicity (Repeated Exposure):** Causes damage to organs through prolonged or repeated exposure.

**Reproductive Toxicity:** Suspected of damaging fertility or the unborn child.

**Specific Target Organ Toxicity (Single Exposure):** Not classified

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** Exposure may produce cough, mucous secretions, shortness of breath, chest tightness or other symptoms indicative of an allergic/sensitization reaction. Dust may be harmful or cause irritation. Inhalation of dust may cause pulmonary fibrosis.

**Symptoms/Injuries After Skin Contact:** May cause an allergic skin reaction. Contact with hot, molten metal will cause thermal burns. Mechanical damage via flying particles and chipped slag is possible.

**Symptoms/Injuries After Eye Contact:** During metal processing, dusts caused from milling and physical alteration will likely cause eye irritation. Fumes from thermal decomposition or molten material will likely be irritating to the eyes.

**Symptoms/Injuries After Ingestion:** For particulates and dust: This material is harmful orally and can cause adverse health effects or death in significant amounts.

**Chronic Symptoms:** May cause cancer. May cause damage to organs through prolonged or repeated exposure. Suspected of damaging fertility or the unborn child.

**Aluminum:** Inhalation of finely divided aluminum powder may cause pulmonary fibrosis. **Cobalt:** Chronic exposure to cobalt-containing hard metal (dust or fume) can result in a serious lung disease called "hard metal lung disease", which is a type of pneumoconiosis (lung fibrosis).

**Chromium:** Certain hexavalent chromium compounds have been demonstrated to be carcinogenic on the basis of epidemiological investigations on workers and experimental studies in animals. Increased incidences of respiratory cancer have been found in chromium (VI) workers. There is an increased incidence of lung cancer in industrial workers exposed to chromium (VI) compounds. Please refer to IARC volume 23 for a more detailed discussion.

**Tantalum:** Repeated exposure to tantalum alloys may cause fibrosis, chronic rhinitis and "hard metal pneumoconiosis".

**Nickel:** May cause a form of dermatitis known as nickel itch and intestinal irritation, which may cause disorders, convulsions and asphyxia. Nickel metal powder, when respirable, is a suspected human carcinogen, and is known to cause damage to the lungs through inhalation.

**Silicon:** Can cause chronic bronchitis and narrowing of the airways.

#### 11.2. Information on Toxicological Effects - Ingredient(s)

**LD50 and LC50 Data:**

Tantalum (7440-25-7)
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LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rat	> 2000 mg/kg
<b>Chromium (7440-47-3)</b>	
LD50 Oral Rat	> 5000 mg/kg
LC50 Inhalation Rat	> 5.41 mg/l/4h
<b>Nickel (7440-02-0)</b>	
LD50 Oral Rat	> 9000 mg/kg
LC50 Inhalation Rat	> 10.2 mg/l (Exposure time: 1 h)
<b>Silicon (7440-21-3)</b>	
LD50 Oral Rat	3160 mg/kg
<b>Cobalt (7440-48-4)</b>	
LD50 Oral Rat	215.9 - 1140 mg/kg
LC50 Inhalation Rat	> 10 mg/l (Exposure time: 1 h)
LC50 Inhalation Rat	< 0.05 mg/l/4h
<b>Chromium (7440-47-3)</b>	
IARC Group	3
<b>Nickel (7440-02-0)</b>	
IARC Group	2B
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Cobalt compounds</b>	
IARC Group	2B
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Nickel compounds</b>	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.
<b>Cobalt (7440-48-4)</b>	
IARC Group	2B
National Toxicology Program (NTP) Status	Evidence of Carcinogenicity, Reasonably anticipated to be Human Carcinogen.
OSHA Hazard Communication Carcinogen List	In OSHA Hazard Communication Carcinogen list.

## SECTION 12: ECOLOGICAL INFORMATION

### 12.1. Toxicity

Ecology - General: May cause long lasting harmful effects to aquatic life.

<b>Nickel (7440-02-0)</b>	
LC50 Fish 1	100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio)
EC50 Daphnia 1	100 mg/l (Exposure time: 48 h - Species: Daphnia magna)
LC50 Fish 2	15.3 mg/l
EC50 Daphnia 2	1 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
<b>Cobalt (7440-48-4)</b>	
LC50 Fish 1	> 100 mg/l (Exposure time: 96 h - Species: Brachydanio rerio [static])

### 12.2. Persistence and Degradability Not available

### 12.3. Bioaccumulative Potential

<b>Cobalt (7440-48-4)</b>	
BCF Fish 1	(no bioaccumulation)

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**12.4. Mobility in Soil** Not available

**12.5. Other Adverse Effects** Not available

### SECTION 13: DISPOSAL CONSIDERATIONS

#### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

**Ecology - Waste Materials:** Avoid release to the environment. This material is hazardous to the aquatic environment. Keep out of sewers and waterways.

### SECTION 14: TRANSPORT INFORMATION

The shipping description(s) stated herein were prepared in accordance with certain assumptions at the time the SDS was authored, and can vary based on a number of variables that may or may not have been known at the time the SDS was issued.

**14.1. In Accordance with DOT** Not regulated for transport

**14.2. In Accordance with IMDG** Not regulated for transport

**14.3. In Accordance with IATA** Not regulated for transport

**14.4. In Accordance with TDG** Not regulated for transport

### SECTION 15: REGULATORY INFORMATION

#### 15.1. US Federal Regulations

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SARA Section 311/312 Hazard Classes	Physical hazard - Combustible dust Health hazard - Respiratory or skin sensitization Health hazard - Reproductive toxicity Health hazard - Carcinogenicity Health hazard - Acute toxicity (any route of exposure) Health hazard - Specific target organ toxicity (single or repeated exposure)
<b>Tungsten (7440-33-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Tantalum (7440-25-7)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Chromium (7440-47-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	5000 lb no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is >100 µm
SARA Section 313 - Emission Reporting	1 %
<b>Nickel (7440-02-0)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb (only applicable if particles are < 100 µm)
SARA Section 313 - Emission Reporting	0.1 %
<b>Tantalum carbide (TaC) (12070-06-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Cobalt inorganic compounds</b>	
Subject to reporting requirements of United States SARA Section 313	
SARA Section 313 - Emission Reporting	0.1 %
<b>Nickel compounds</b>	
Subject to reporting requirements of United States SARA Section 313	

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<b>SARA Section 313 - Emission Reporting</b>	0.1 %
<b>Nitrogen (7727-37-9)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Titanium (7440-32-6)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Aluminum (7429-90-5)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
<b>SARA Section 313 - Emission Reporting</b>	1 % (dust or fume only)
<b>Silicon (7440-21-3)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
<b>Cobalt (7440-48-4)</b>	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Subject to reporting requirements of United States SARA Section 313	
<b>SARA Section 313 - Emission Reporting</b>	0.1 %

### 15.2. US State Regulations

#### California Proposition 65



**WARNING:** This product can expose you to Cobalt, which is known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

Chemical Name (CAS No.)	Carcinogenicity	Developmental Toxicity	Female Reproductive Toxicity	Male Reproductive Toxicity
Nickel (7440-02-0)	X			
Nickel compounds	X			
Cobalt (7440-48-4)	X			

#### **Tungsten (7440-33-7)**

U.S. - Massachusetts - Right To Know List  
 U.S. - New Jersey - Right to Know Hazardous Substance List  
 U.S. - Pennsylvania - RTK (Right to Know) List

#### **Tantalum (7440-25-7)**

U.S. - Massachusetts - Right To Know List  
 U.S. - New Jersey - Right to Know Hazardous Substance List  
 U.S. - Pennsylvania - RTK (Right to Know) List

#### **Chromium (7440-47-3)**

U.S. - Massachusetts - Right To Know List  
 U.S. - New Jersey - Right to Know Hazardous Substance List  
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
 U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances  
 U.S. - Pennsylvania - RTK (Right to Know) List

#### **Nickel (7440-02-0)**

U.S. - Massachusetts - Right To Know List  
 U.S. - New Jersey - Right to Know Hazardous Substance List  
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
 U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances  
 U.S. - Pennsylvania - RTK (Right to Know) List

#### **Cobalt compounds**

U.S. - New Jersey - Right to Know Hazardous Substance List  
 U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
 U.S. - Pennsylvania - RTK (Right to Know) List

#### **Nickel compounds**

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U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### **Chromium compounds**

U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### **Nitrogen (7727-37-9)**

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### **Titanium (7440-32-6)**

U.S. - New Jersey - Right to Know Hazardous Substance List

#### **Aluminum (7429-90-5)**

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### **Silicon (7440-21-3)**

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) List

#### **Cobalt (7440-48-4)**

U.S. - Massachusetts - Right To Know List  
U.S. - New Jersey - Right to Know Hazardous Substance List  
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List  
U.S. - Pennsylvania - RTK (Right to Know) List

### 15.3. Canadian Regulations

#### **Tungsten (7440-33-7)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Tantalum (7440-25-7)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Chromium (7440-47-3)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Nickel (7440-02-0)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Tantalum carbide (TaC) (12070-06-3)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Nitrogen (7727-37-9)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Titanium (7440-32-6)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Aluminum (7429-90-5)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Silicon (7440-21-3)**

Listed on the Canadian DSL (Domestic Substances List)

#### **Cobalt (7440-48-4)**

Listed on the Canadian DSL (Domestic Substances List)

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### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Date of Preparation or Latest Revision** : 01/28/2020

**Revision**

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200 and Canada's Hazardous Products Regulations (HPR) SOR/2015-17.

**GHS Full Text Phrases:**

Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Aquatic Acute 1	Hazardous to the aquatic environment - Acute Hazard Category 1
Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment - Chronic Hazard Category 3
Aquatic Chronic 4	Hazardous to the aquatic environment - Chronic Hazard Category 4
Carc. 1	Carcinogenicity, Category 1
Carc. 1B	Carcinogenicity Category 1B
Carc. 2	Carcinogenicity Category 2
Comb. Dust	Combustible Dust
Press. Gas (Comp.)	Gases under pressure Compressed gas
Repr. 2	Reproductive toxicity Category 2
Resp. Sens. 1B	Respiratory sensitization, Category 1B
Simple Asphy	Simple Asphyxiant
Skin Sens. 1	Skin sensitization, Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
H280	Contains gas under pressure; may explode if heated
H302	Harmful if swallowed
H317	May cause an allergic skin reaction
H334	May cause an allergy or asthma symptoms or breathing difficulties if inhaled
H350	May cause cancer
H351	Suspected of causing cancer
H361	Suspected of damaging fertility or the unborn child
H372	Causes damage to organs through prolonged or repeated exposure
H400	Very toxic to aquatic life
H401	Toxic to aquatic life
H412	Harmful to aquatic life with long lasting effects
H413	May cause long lasting harmful effects to aquatic life

*This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.*

NA GHS SDS 2015 (Can, US)