Synthetic diamond impregnated segments

Safety Data Sheet

according to the Hazardous Products Regulation (February 11, 2015)
Issue date: 03/24/2025 Revision date: 03/24/2025 Supersedes: 04/05/2024 Version: 2.1

SECTION 1: Identification

1.1. Product identifier

Product form	Article
Trade name	Synthetic diamond impregnated segments
Product code	BU Diamond
Other means of identification	AG Disc - P 100-230mm, MCS, LCS, HCL, MCL, SPX-H Speed >35mm, SP-H Speed >35mm, AG CW-P 100-180mm, AG Disc SP-T 100-230mm, AG CW-SPX 100-125mm / 125-150mm / 150mm / 180mm, Bench Saw SP-S 300-400mm / 450-500mm, Floor Saw SP-S 450-500mm / 500mm, Gas Saw - SPX-EQD 300mm / 300-305mm / 300-400mm, AG Disc - SP 100-150mm / 180-230mm, AG Disc - SPX-EQD 180-230mm / 230mm, AG CW-SP 180mm, PU 52mm

1.2. Recommended use and restrictions on use

Recommended use	Grinding materials
Restrictions on use	For professional use only

1.3. Supplier

Supplier
Hilti (Canada) Corp.
2201 Bristol Circle
Suite 700
CA L6H 0J8 Oakville, Ontario
Canada
T +1905 8139200
1-800-363-4458 toll free, F +1 905 813 9009
ca-sales@hilti.com

Department issuing data specification sheet
Hilti AG
Feldkircherstraße 100
FL 9494 Schaan
Liechtenstein
T +423 234 2111
product.compliance-power.tools@hilti.com

1.4. Emergency telephone number

Emergency number	Emergency CONTACT (24-Hour-Number) GBK/Infotrac ID 101022 (USA domestic) 1 800 535 5053 or international (001) 352 323 3500

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Not classified

2.2. GHS Label elements, including precautionary statements

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS CA)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Comments: Sulfur and phosphorus are present in bound form and are not released in elemental form.

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
copper	copper bronze, powder / copper, powder	CAS-No.: 7440-50-8	15 - 60	Not classified
nickel	nickel elemental nickel	CAS-No.: 7440-02-0	1 – 30	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Tungsten (W)	Tungsten (W) tungsten / wolfram	CAS-No.: 7440-33-7	< 30	Not classified
Cobalt	cobalt	CAS-No.: 7440-48-4	1 – 10	Acute Tox. 4 (Oral), H302 Resp. Sens. 1B, H334 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350 Repr. 1B, H360
Tin	Tin alpha-tin / silver matt / tin	CAS-No.: 7440-31-5	3 – 10	Not classified
Chromium	Chromium chromium / chromium, metal	CAS-No.: 7440-47-3	<= 1	Not classified
Manganese	Manganese colloidal manganese / manganese / manganese, chip / manganese, elemental / manganese, flakes / manganese, metal / manganese, slabs	CAS-No.: 7439-96-5	<= 1	Not classified
red phosphorus	red phosphorus phosphorus / phosphorus, amorphous, red / phosphorus, red, amorphous	CAS-No.: 7723-14-0	0.1 – 1	Flam. Sol. 1, H228
Sulfur	sulfur	CAS-No.: 7704-34-9	<= 1	Skin Irrit. 2, H315

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
molybdenum	molybdenum molybdenum / molybdenum, powder	CAS-No.: 7439-98-7	<= 1	Not classified
Graphite	Graphite carbon-graphite / graphite,natural / graphite,powder (=grafiet)	CAS-No.: 7782-42-5	<= 1	Not classified
Silicon	silicon / silicon, containing by weight not less than 99.99% of silicon, crystalline	CAS-No.: 7440-21-3	<= 1	Not classified

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

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing. When symptoms occur: go into open air and ventilate suspected area.

First-aid measures after skin contact: Gently wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention.

First-aid measures after eye contact: Rinse eyes with water as a precaution. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion: Rinse mouth.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation: May cause respiratory irritation.

Symptoms/effects after eye contact: May cause severe irritation.

Potential adverse human health effects and symptoms: Irritation: may cause irritation to the respiratory system.

4.3. Immediate medical attention and special treatment, if necessary

Other medical advice or treatment: Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media: Use extinguishing agent suitable for surrounding fire. Water. Sand. Foam. Carbon dioxide.

5.2. Unsuitable extinguishing media

Unsuitable extinguishing media: Do not use a heavy water stream.

5.3. Specific hazards arising from the hazardous product

Fire hazard: Not flammable.

5.4. Special protective equipment and precautions for fire-fighters

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

No additional information available

6.2. Methods and materials for containment and cleaning up

Methods for cleaning up	Shovel into suitable and closed container for disposal.

6.3. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection"

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	The product should not be used for purposes other than those shown above without first referring to the supplier and obtaining written handling instructions.
Hygiene measures	Do not eat, drink or smoke when using this product. Always wash hands after handling the product. Wash contaminated clothing before reuse.
Additional hazards when processed	Normal use of this product shall imply use in accordance with the instructions on the packaging and in line with the expectations of a professional user.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions	Store in a dry place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

copper (7440-50-8)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Copper
OEL TWA	0.2 mg/m³ Fume 1 mg/m³ Dusts/mists, as Cu
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Copper
VEMP (OEL TWAEV)	0.2 mg/m³ Fume (as Cu) 1 mg/m³ Dusts & mists (as Co)
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Copper, as Cu
OEL TWA	1 mg/m³ Dusts and mists 0.2 mg/m³ Fume
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Copper, as Cu

copper (7440-50-8)	
OEL TWA	0.2 mg/m³ (Fume) 1 mg/m³ (Dusts and mists)
Notations and remarks	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2024
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Copper Dusts and mists, as Cu
OEL TWA	1 mg/m³
Notations and remarks	Irr; GI; metal fume fever
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Copper, as Cu
OEL TWA	0.2 mg/m³ (Fume) 1 mg/m³ (Dusts and mists)
Notations and remarks	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2024
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Copper, as Cu
OEL TWA	0.2 mg/m³ (Fume) 1 mg/m³ (Dusts and mists)
Notations and remarks	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2024
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Copper, (as Cu)
OEL TWA	0.2 mg/m³ Fume 1 mg/m³ Dusts and mists
OEL STEL	0.6 mg/m³ Fume 3 mg/m³ Dusts and mists
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Copper, (as Cu)
OEL TWA	0.2 mg/m³ Fume 1 mg/m³ Dusts and mists
OEL STEL	0.6 mg/m³ Fume 3 mg/m³ Dusts and mists
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Copper - Dusts and mists, as Cu
OEL TWAEV	1 mg/m³

copper (7440-50-8)	
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Copper, as Cu
OEL TWA	0.2 mg/m³ (Fume) 1 mg/m³ (Dusts and mists)
Notations and remarks	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2024
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Copper, (as Cu)
OEL TWA	0.2 mg/m³ fume 1 mg/m³ dusts and mists
OEL STEL	0.6 mg/m³ fume 3 mg/m³ dusts and mists
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

Cobalt (7440-48-4)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Cobalt, elemental inorganic compounds, as Co
OEL TWA	0.02 mg/m³
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Cobalt, elemental and inorganic compounds (as Co)
VEMP (OEL TWAEV)	0.02 mg/m³ Pi
Notations and remarks	C3, S(D), S(R)
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, as Co
OEL TWA	0.02 mg/m³ Inhalable
Notations and remarks	IARC group 2B carcinogen; S(D) (substance with specific evidence of sensitization by dermal route)
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, as Co
OEL TWA	0.02 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Pulm func changes. Notations: DSEN; RSEN; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2024

Cobalt (7440-48-4)	
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds as Co
OEL TWA	0.02 mg/m³
Notations and remarks	Pneumonitis
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, as Co
OEL TWA	0.02 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Pulm func changes. Notations: DSEN; RSEN; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2024
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, as Co
OEL TWA	0.02 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Pulm func changes. Notations: DSEN; RSEN; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2024
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, (as Co)
OEL TWA	0.02 mg/m³
OEL STEL	0.06 mg/m³
Notations and remarks	Designated substance
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, (as Co)
OEL TWA	0.02 mg/m³
OEL STEL	0.06 mg/m³
Notations and remarks	Designated substance
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, as Co
OEL TWAEV	0.02 mg/m³
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, as Co
OEL TWA	0.02 mg/m³ (I - Inhalable particulate matter)

Cobalt (7440-48-4)	
Notations and remarks	TLV® Basis: Pulm func changes. Notations: DSEN; RSEN; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans); BEI
Regulatory reference	ACGIH 2024
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds, (as Co)
OEL TWA	0.02 mg/m³
OEL STEL	0.06 mg/m³
Notations and remarks	Designated Chemical Substance
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

Chromium (7440-47-3)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Chromium and inorganic compounds, as Cr - Metal and Cr III compounds
OEL TWA	0.5 mg/m³
Notations and remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required.
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Chromium (metal)
VEMP (OEL TWAEV)	0.5 mg/m³ Pi
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Chromium and inorganic compounds: Metallic chromium, as Cr(0)
OEL TWA	0.5 mg/m³ Inhalable
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Metallic chromium, as Cr(0)
OEL TWA	0.5 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Resp tract irr
Regulatory reference	ACGIH 2024
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Chromium and inorganic compounds as Cr Metal and Cr III compounds
OEL TWA	0.5 mg/m³
Notations and remarks	URT & skin irr
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Metallic chromium, as Cr(0)

Chromium (7440-47-3)	
OEL TWA	0.5 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Resp tract irr
Regulatory reference	ACGIH 2024
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Metallic chromium, as Cr(0)
OEL TWA	0.5 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Resp tract irr
Regulatory reference	ACGIH 2024
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Chromium metal and inorganic compounds, (as Cr): Metal and Cr (III) compounds
OEL TWA	0.5 mg/m³
OEL STEL	1.5 mg/m³
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Chromium metal and inorganic compounds, (as Cr): Metal and Cr (III) compounds
OEL TWA	0.5 mg/m³
OEL STEL	1.5 mg/m³
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Metallic chromium, as Cr(0)
OEL TWA	0.5 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Resp tract irr
Regulatory reference	ACGIH 2024
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Chromium metal and inorganic compounds, (as Cr): Metal and Cr (III) compounds
OEL TWA	0.5 mg/m³
OEL STEL	1.5 mg/m³
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

Manganese (7439-96-5)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Manganese, elemental & inorganic compounds, as Mn
OEL TWA	0.2 mg/m³
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Manganese - Fumes, dust and compounds (as Mn)

Manganese (7439-96-5)	
VEMP (OEL TWAEV)	0.2 mg/m³ Pi 0.05 mg/m³ Pr
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Manganese - Elemental & inorganic compounds, as Mn
OEL TWA	0.02 mg/m³ Respirable 0.1 mg/m³ Inhalable
Notations and remarks	R (the substance has an adverse reproductive effect)
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Manganese, elemental and inorganic compounds, as Mn
OEL TWA	0.02 mg/m³ (R - Respirable particulate matter) 0.1 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Manganese
OEL TWA	0.02 mg/m³
Notations and remarks	CNS impair; A4
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Manganese, elemental and inorganic compounds, as Mn
OEL TWA	0.02 mg/m³ (R - Respirable particulate matter) 0.1 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Manganese, elemental and inorganic compounds, as Mn
OEL TWA	0.02 mg/m³ (R - Respirable particulate matter) 0.1 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Manganese and inorganic compounds, (as Mn)
OEL TWA	0.02 mg/m³
OEL STEL	0.6 mg/m³
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)

Manganese (7439-96-5)	
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Manganese and inorganic compounds, (as Mn)
OEL TWA	0.2 mg/m³
OEL STEL	0.6 mg/m³
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Manganese
OEL TWAEV	0.2 mg/m³
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Manganese, elemental and inorganic compounds, as Mn
OEL TWA	0.02 mg/m³ (R - Respirable particulate matter) 0.1 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: CNS impair. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Manganese and inorganic compounds, (as Mn)
OEL TWA	0.2 mg/m³
OEL STEL	0.6 mg/m³
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

nickel (7440-02-0)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Nickel Elemental/metal
OEL TWA	1.5 mg/m³
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Nickel Metal
VEMP (OEL TWAEV)	1.5 mg/m³ Id
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Nickel - Elemental, Soluble inorganic compounds, as Ni
OEL TWA	0.05 mg/m³
Notations and remarks	Elemental nickel and alloys containing nickel are IARC group 2B carcinogens. Nickel compounds are IARC group 1 carcinogens.
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)

nickel (7440-02-0)	
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Nickel, elemental
OEL TWA	1.5 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Dermatitis; pneumoconiosis. Notations: A5 (Not Suspected as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Nickel as Ni Elemental [7440-02-0]
OEL TWA	1.5 mg/m³
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Nickel, elemental
OEL TWA	1.5 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Dermatitis; pneumoconiosis. Notations: A5 (Not Suspected as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Nickel, elemental
OEL TWA	1.5 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Dermatitis; pneumoconiosis. Notations: A5 (Not Suspected as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Nickel, (as Ni): Elemental
OEL TWA	1.5 mg/m³ (inhalable fraction)
OEL STEL	3 mg/m³ (inhalable fraction)
Notations and remarks	Designated substance
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Nickel, (as Ni): Elemental
OEL TWA	1.5 mg/m³ (inhalable fraction)
OEL STEL	3 mg/m³ (inhalable fraction)
Notations and remarks	Designated substance
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Nickel - Elemental/metal
OEL TWAEV	1 mg/m³ (I - Inhalable fraction)

nickel (7440-02-0)	
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Nickel, elemental
OEL TWA	1.5 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	TLV® Basis: Dermatitis; pneumoconiosis. Notations: A5 (Not Suspected as a Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Nickel, (as Ni): Elemental
OEL TWA	1.5 mg/m³ (inhalable fraction)
OEL STEL	3 mg/m³ (inhalable fraction)
Notations and remarks	Designated Chemical Substance
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

red phosphorus (7723-14-0)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Phosphorous (yellow)
OEL TWA	0.1 mg/m³
Regulatory reference	Alberta Regulation 191/2021

Tin (7440-31-5)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Tin, as Sn Metal
OEL TWA	2 mg/m³
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Tin and its inorganic compounds, (as Sn) (except stannane and indium tin oxide)
VEMP (OEL TWAEV)	2 mg/m³ Pi
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Tin
OEL TWA	2 mg/m³
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Tin and inorganic compounds, excluding Tin hydride and Indium tin oxide, as Sn
OEL TWA	2 mg/m³ (I - Inhalable particulate matter)

Tin (7440-31-5)	
Notations and remarks	Non fibrous = TLV® Basis: URT irr Fibrous (including whiskers) = TLV® Basis: Mesothelioma; cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Tin and inorganic compounds,excluding Tin hydride, as Sn (1992) Metal
OEL TWA	2 mg/m³
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Tin and inorganic compounds, excluding Tin hydride and Indium tin oxide, as Sn
OEL TWA	2 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	Non fibrous = TLV® Basis: URT irr Fibrous (including whiskers) = TLV® Basis: Mesothelioma; cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Tin and inorganic compounds, excluding Tin hydride and Indium tin oxide, as Sn
OEL TWA	2 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	Non fibrous = TLV® Basis: URT irr Fibrous (including whiskers) = TLV® Basis: Mesothelioma; cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Tin, (as Sn): metal
OEL TWA	2 mg/m³
OEL STEL	4 mg/m³
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Tin, (as Sn): metal
OEL TWA	2 mg/m³
OEL STEL	4 mg/m³
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Tin, as Sn - Metal
OEL TWAEV	2 mg/m³
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Tin and inorganic compounds, excluding Tin hydride and Indium tin oxide, as Sn

Tin (7440-31-5)	
OEL TWA	2 mg/m³ (I - Inhalable particulate matter)
Notations and remarks	Non fibrous = TLV® Basis: URT irr Fibrous (including whiskers) = TLV® Basis: Mesothelioma; cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2024
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Tin, (as Sn): metal
OEL TWA	2 mg/m³
OEL STEL	4 mg/m³
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

Tungsten (W) (7440-33-7)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Tungsten, as W Metal and insoluble compounds
OEL TWA	5 mg/m³
OEL STEL	10 mg/m³
Notations and remarks	Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required.
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Tungsten and compounds, in the absence of Cobalt (as W)
VEMP (OEL TWAEV)	3 ppm Pr
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Tungsten and compounds in the absence of Cobalt, as W
OEL TWA	3 mg/m³
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Tungsten and compounds, in the absence of Cobalt, as W
OEL TWA	3 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: Lung dam
Regulatory reference	ACGIH 2024
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Tungsten , as W (1979) Metal and insoluble compounds
OEL TWA	5 mg/m³
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Tungsten and compounds, in the absence of Cobalt, as W

Tungsten (W) (7440-33-7)	
OEL TWA	3 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: Lung dam
Regulatory reference	ACGIH 2024
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Tungsten and compounds, in the absence of Cobalt, as W
OEL TWA	3 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: Lung dam
Regulatory reference	ACGIH 2024
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Tungsten, (as W): Metal and insoluble compounds
OEL TWA	5 mg/m³
OEL STEL	10 mg/m³
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Tungsten, (as W): Metal and insoluble compounds
OEL TWA	5 mg/m³
OEL STEL	10 mg/m³
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Tungsten , as W - Metal and insoluble compounds
OEL TWAEV	5 mg/m³
	10 mg/m³
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Tungsten and compounds, in the absence of Cobalt, as W
OEL TWA	3 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: Lung dam
Regulatory reference	ACGIH 2024
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Tungsten, (as W): metal and insoluble compounds
OEL TWA	5 mg/m³
OEL STEL	10 mg/m³
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

Sulfur (7704-34-9)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Sulphur
OEL TWA	10 mg/m³
Regulatory reference	Alberta Regulation 191/2021

molybdenum (7439-98-7)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Molybdenum, as Mo Metal and insoluble compounds
OEL TWA	3 mg/m³ Respirable 10 mg/m³ Total
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Molybdenum (as Mo) - Metal and insoluble compounds
VEMP (OEL TWAEV)	10 mg/m³ Id 3 mg/m³ Rd
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Molybdenum - Metal and insoluble compounds, as Mo
OEL TWA	3 mg/m³ Respirable 10 mg/m³ Inhalable
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Molybdenum, metal and insoluble compounds, as Mo
OEL TWA	10 mg/m³ (I - Inhalable particulate matter) 3 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: LRT irr
Regulatory reference	ACGIH 2024
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Molybdenum Metal and insoluble compounds
OEL TWA	3 mg/m³
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Molybdenum, metal and insoluble compounds, as Mo
OEL TWA	10 mg/m³ (I - Inhalable particulate matter) 3 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: LRT irr
Regulatory reference	ACGIH 2024
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Molybdenum, metal and insoluble compounds, as Mo

molybdenum (7439-98-7)	
OEL TWA	10 mg/m³ (I - Inhalable particulate matter) 3 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: LRT irr
Regulatory reference	ACGIH 2024
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Molybdenum, (as Mo): Metal and insoluble compounds
OEL TWA	10 mg/m³ (inhalable fraction) 3 mg/m³ (respirable fraction)
OEL STEL	20 mg/m³ (inhalable fraction) 6 mg/m³ (respirable fraction)
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Molybdenum, (as Mo): Metal and insoluble compounds
OEL TWA	10 mg/m³ (inhalable fraction) 3 mg/m³ (respirable fraction)
OEL STEL	20 mg/m³ (inhalable fraction) 6 mg/m³ (respirable fraction)
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Molybdenum, as Mo - Metal and insoluble compounds
OEL TWAEV	10 mg/m³ (I - Inhalable fraction) 3 mg/m³ (R - Respirable fraction)
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Molybdenum, metal and insoluble compounds, as Mo
OEL TWA	10 mg/m³ (I - Inhalable particulate matter) 3 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: LRT irr
Regulatory reference	ACGIH 2024
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Molybdenum, (as Mo): Metal and insoluble compounds
OEL TWA	10 mg/m³ (inhalable fraction) 3 mg/m³ (respirable fraction)
OEL STEL	20 mg/m³ (inhalable fraction) 6 mg/m³ (respirable fraction)
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

Graphite (7782-42-5)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Graphite (all forms except graphite fibres)
OEL TWA	2 mg/m³ respirable
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Graphite (all forms except fibers)
VEMP (OEL TWAEV)	2 mg/m³ Rd
Notations and remarks	Note 1: The standard corresponds to dust containing no asbestos and the percentage in crystalline silica is less than 1%
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Graphite - All forms except graphite fibres
OEL TWA	2 mg/m³ Respirable
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Graphite, all forms except graphite fibers
OEL TWA	2 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: Pneumoconiosis
Regulatory reference	ACGIH 2025
Canada (New Brunswick) - Occupational Exposure Limits	
Local name	Graphite
OEL TWA	2 mg/m³
Notations and remarks	Pneumoconiosis
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Graphite, all forms except graphite fibers
OEL TWA	2 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: Pneumoconiosis
Regulatory reference	ACGIH 2025
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Graphite, all forms except graphite fibers
OEL TWA	2 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: Pneumoconiosis
Regulatory reference	ACGIH 2025
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Graphite, natural-all forms except graphite fibres

Graphite (7782-42-5)	
OEL TWA	2 mg/m³ (respirable fraction)
OEL STEL	4 mg/m³ (respirable fraction)
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Graphite, natural-all forms except graphite fibres
OEL TWA	2 mg/m³ (respirable fraction)
OEL STEL	4 mg/m³ (respirable fraction)
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Graphite (all forms except graphite fibers)
OEL TWAEV	2 mg/m³ (R - Respirable fraction)
Regulatory reference	Ontario Occuational Exposure Limits under Regulation 833
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Graphite, all forms except graphite fibers
OEL TWA	2 mg/m³ (R - Respirable particulate matter)
Notations and remarks	TLV® Basis: Pneumoconiosis
Regulatory reference	ACGIH 2025
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Graphite, natural-all forms except graphite fibres
OEL TWA	2 mg/m³ (respirable fraction)
OEL STEL	4 mg/m³ (respirable fraction)
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

Silicon (7440-21-3)	
Canada (Quebec) - Occupational Exposure Limits	
Local name	Silicon
VEMP (OEL TWAEV)	10 mg/m³ Td
Notations and remarks	Note 1: The standard corresponds to dust containing no asbestos and the percentage in crystalline silica is less than 1%
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Silicon (Particles Not Otherwise Classified (PNOC))
OEL TWA	10 mg/m³ Total dust 3 mg/m³ Respirable fraction
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)

Silicon (7440-21-3)	
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Silicon
OEL TWA	10 mg/m³
OEL STEL	20 mg/m³
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Silicon
OEL TWA	10 mg/m³
OEL STEL	20 mg/m³
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Silicon
OEL TWA	10 mg/m³
OEL STEL	20 mg/m³
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

8.2. Appropriate engineering controls

Appropriate engineering controls: Ensure good ventilation of the work station. Use dust removal system, vacuum cleaner, air cleaner; cooling water cleaner (Hilti WMS system).

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:
Dust formation: dust mask. In case of dust production: protective goggles. Gloves. Protective clothing.

Materials for protective clothing:	
Condition	**Material**
	Flame retardant protective clothing

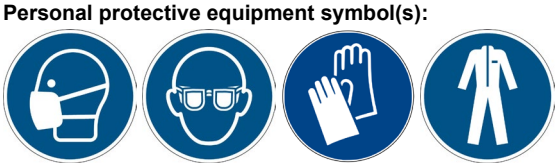
Hand protection:				
Wear leather gloves.				
Type	**Material**	**Permeation**	**Thickness (mm)**	**Penetration**
	leather gloves			

Eye protection:		
Safety glasses		
Type	**Field of application**	**Characteristics**
Safety glasses	Dust	

Skin and body protection:
Wear suitable protective clothing

Respiratory protection:		
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended		
Device	**Filter type**	**Condition**
		Dust protection

Personal protective equipment symbol(s):



Other information:
Hazardous dust of the workpiece material may be generated during grinding / drilling and / or sanding operations. National regulations for dust exposure limit values have to be taken into consideration as part of the job hazard assessment.

Most of the dust generated during grinding is from the base material being ground and the potential hazard from this exposure must be evaluated. This dust may present a fire or dust explosion hazard and may present a serious health hazard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	No data available
Colour	Silver-grey to copper-colored
Odour	odourless
Odour threshold	No data available
pH	No data available
Relative evaporation rate (butylacetate=1)	No data available
Relative evaporation rate (ether=1)	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Auto-ignition temperature	No data available
Decomposition temperature	> 400 °C
Flammability (solid, gas)	No data available
Vapour pressure	No data available
Relative vapour density at 20°C	No data available
Relative density	No data available
Solubility	insoluble in water.
Partition coefficient n-octanol/water (Log Pow)	No data available
Viscosity, kinematic	No data available
Explosive limits	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

Reactivity	The product is non-reactive under normal conditions of use, storage and transport. Product is not explosive.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reactions known under normal conditions of use.
Conditions to avoid	No additional information available
Incompatible materials	No additional information available
Hazardous decomposition products	No additional information available
Hardening time:	No additional information available

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	Not classified
Acute toxicity (dermal)	Not classified
Acute toxicity (inhalation)	Not classified

copper (7440-50-8)	
LC50 Inhalation - Rat (Dust/Mist)	> 5.11 mg/l/4h (OECD 436 method)

Cobalt (7440-48-4)	
LD50 oral rat	550 mg/kg bodyweight (OECD 425 method)
LD50 oral	550 mg/kg
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 15 day(s))

Chromium (7440-47-3)	
LD50 oral rat	> 5000 mg/kg ((OECD 420 method); <tx:KFT_READ-ACROSS>)
LC50 Inhalation - Rat	> 5.41 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
LC50 Inhalation - Rat (Dust/Mist)	> 5.41 mg/l/4h ((OECD 403 method); <tx:KFT_READ-ACROSS>)

Manganese (7439-96-5)	
LD50 oral rat	> 2000 mg/kg (OECD 420 method)
LD50 oral	2500 mg/kg
LC50 Inhalation - Rat	> 5.14 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (dust), 14 day(s))
LC50 Inhalation - Rat (Dust/Mist)	> 5.14 mg/l/4h (OECD 403 method)

nickel (7440-02-0)	
LD50 oral rat	> 9000 mg/kg (OECD 401 method)
LD50 oral	9000 mg/kg
LC50 Inhalation - Rat	≥ 10.2 mg/l (1 h)

red phosphorus (7723-14-0)	
LD50 oral	15000 mg/kg

Tin (7440-31-5)	
LD50 oral rat	> 2000 mg/kg (OECD 423 method);No mortality with the given dose
LD50 dermal rat	> 2000 mg/kg (OECD 402 method);No mortality with the given dose
LC50 Inhalation - Rat	> 4.75 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EU Method B.2 (Acute Toxicity (Inhalation)), Guideline: EPA OPPTS 870.1300 (Acute inhalation toxicity), Remarks on results: not determinable due to absence of adverse toxic effects
LC50 Inhalation - Rat (Dust/Mist)	> 4.75 mg/l (OECD 403 method);No mortality with the given dose

Tungsten (W) (7440-33-7)	
LD50 oral rat	> 2000 mg/kg (OECD 401 method)
LD50 dermal rat	> 2000 mg/kg (OECD 402 method)
LC50 Inhalation - Rat	> 5.4 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)
LC50 Inhalation - Rat (Dust/Mist)	> 5.4 mg/l/4h (OECD 403 method)

molybdenum (7439-98-7)	
LD50 oral rat	4233 mg/kg ((OECD 401 method); <tx:KFT_READ-ACROSS>)
LD50 dermal rat	> 2000 mg/kg ((OECD 402 method); <tx:KFT_READ-ACROSS>)
LC50 Inhalation - Rat (Dust/Mist)	> 1.93 mg/l/4h ((OECD 403 method); <tx:KFT_READ-ACROSS>)

Graphite (7782-42-5)	
LD50 oral rat	> 2000 mg/kg (OECD 423)
LC50 Inhalation - Rat	> 2000 mg/m³ (4h; OECD 403)

Silicon (7440-21-3)	
LD50 oral rat	> 5000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Read-across, Oral, 14 day(s))

Skin corrosion/irritation	Not classified
Serious eye damage/irritation	Not classified
Respiratory or skin sensitization	Not classified
Germ cell mutagenicity	Not classified
Carcinogenicity	Not classified

Cobalt (7440-48-4)	
IARC group	2A - Probably carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

Chromium (7440-47-3)	
IARC group	3 - Not classifiable

nickel (7440-02-0)	
IARC group	2B - Possibly carcinogenic to humans
National Toxicology Program (NTP) Status	Reasonably anticipated to be Human Carcinogen

Reproductive toxicity	Not classified
STOT-single exposure	Not classified
STOT-repeated exposure	Not classified

Chromium (7440-47-3)	
LOAEC (inhalation, rat, dust/mist/fume, 90 days)	≥ 0.0044 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

nickel (7440-02-0)	
LOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.1 mg/m³ (2 years; (OECD 451 method))
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Tin (7440-31-5)	
NOAEL (subacute, oral, animal/female, 28 days)	> 1000 mg/kg bodyweight/day (OECD 407 method)

Tungsten (W) (7440-33-7)	
NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight/day (OECD 422 method)
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	> 0.652 mg/l air Animal: rat, Guideline: OECD Guideline 412 (Subacute Inhalation Toxicity: 28-Day Study)

molybdenum (7439-98-7)	
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	> 0.1 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

Aspiration hazard	Not classified
Likely routes of exposure	Inhalation.
Potential adverse human health effects and symptoms	Irritation: may cause irritation to the respiratory system.
Symptoms/effects after inhalation	May cause respiratory irritation.
Symptoms/effects after eye contact	May cause severe irritation.

SECTION 12: Ecological information

12.1. Toxicity

Hazardous to the aquatic environment, short–term (acute)	Not classified
Hazardous to the aquatic environment, long–term (chronic)	Not classified

Cobalt (7440-48-4)	
LC50 - Fish [1]	> 100 (96h; Danio rerio; OECD 203)
ErC50 algae	0.144 mg/l
EC50 72h - Algae [1]	0.035 mg/l (Pseudokirchnerella subcapitata)
NOEC chronic crustacea	0.00683 mg/l
NOEC (acute)	3.2 mg/l (48h; Daphnia magna; OECD 202)

Chromium (7440-47-3)	
EC50 - Crustacea [1]	13.1 – 14.7 mg/l Test organisms (species): Daphnia magna

Manganese (7439-96-5)	
LC50 - Fish [1]	> 3.6 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value)

Manganese (7439-96-5)	
EC50 - Crustacea [1]	> 1.6 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
ErC50 algae	4.5 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value)

nickel (7440-02-0)	
LC50 - Fish [1]	15.3 mg/l (96h; Oncorhynchus mykiss (Rainbow trout))
EC50 - Other aquatic organisms [1]	0.0276 mg/l (48h; Ceriodaphnia dubia)
EC50 72h - Algae [1]	0.0815 mg/l (72h; Pseudokirchneriella subcapitata; (OECD 201 method))
NOEC chronic fish	0.057 mg/l (32 d; Pimephales promelas)
NOEC chronic crustacea	0.0037 mg/l (10 d; Ceriodaphnia dubia; (OECD 211 method))

Tin (7440-31-5)	
ErC50 algae	> 19.2 µg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Tin)
LOEC (chronic)	0.2 mg/l (7d; Ceriodaphnia dubia; EPA 1002.0)

Tungsten (W) (7440-33-7)	
LC50 - Fish [1]	> 181 mg/l (96 h; Danio rerio; (OECD 203 method); <tx:KFT_READ-ACROSS>)
EC50 - Crustacea [1]	> 163 mg/l (48 h; Daphnia magna; (OECD 202 method); <tx:KFT_READ-ACROSS>)
ErC50 algae	5.76 mg/l (72 h; Pseudokirchneriella subcapitata; (OECD 201 method); <tx:KFT_READ-ACROSS>)

molybdenum (7439-98-7)	
LC50 - Fish [1]	609 mg/l (96 h; Pimephales promelas; (OECD 203 method))
EC50 - Crustacea [1]	1680 mg/l (48 h; Daphnia magna; (OECD 202 method))
NOEC chronic fish	143 mg/l (32 d; Pimephales promelas)
NOEC chronic crustacea	156 mg/l (21 d; Ceriodaphnia dubia)

Graphite (7782-42-5)	
LC50 - Fish [1]	> 100 mg/l (96h; Danio rerio; OECD 203)
EC50 - Crustacea [1]	> 100 mg/l (48h; Daphnia magna; OECD 202)
EC50 72h - Algae [1]	> 100 mg/l (72h; Pseudokirchnerella subcapitata; OECD 201)

Silicon (7440-21-3)	
LC50 - Fish [1]	> 100 mg/l (Pisces, Read-across)

12.2. Persistence and degradability

copper (7440-50-8)	
Persistence and degradability	Not applicable for inorganic substances.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable

copper (7440-50-8)	
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Cobalt (7440-48-4)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Chromium (7440-47-3)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Manganese (7439-96-5)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
nickel (7440-02-0)	
Persistence and degradability	Not applicable for inorganic substances.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
red phosphorus (7723-14-0)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Tin (7440-31-5)	
Persistence and degradability	Not applicable for inorganic substances.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
Tungsten (W) (7440-33-7)	
Persistence and degradability	Not applicable for inorganic substances.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
molybdenum (7439-98-7)	
Persistence and degradability	Not established.

molybdenum (7439-98-7)	
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Graphite (7782-42-5)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
Silicon (7440-21-3)	
Persistence and degradability	Biodegradability: not applicable.
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)

12.3. Bioaccumulative potential

copper (7440-50-8)	
Bioaccumulative potential	Bioaccumulation: not applicable.
Cobalt (7440-48-4)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
BCF - Fish [1]	< 10 (Pisces, Fresh water, Literature study)
BCF - Other aquatic organisms [1]	< 300 (Invertebrata, Literature study)
Chromium (7440-47-3)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Manganese (7439-96-5)	
Bioaccumulative potential	not bioaccumulable.
nickel (7440-02-0)	
Bioaccumulative potential	Not applicable for inorganic substances.
BCF - Other aquatic organisms [1]	8 – 45 (≤ 4 week(s), Cambarus sp., Flow-through system, Fresh water, Experimental value, Fresh weight)
red phosphorus (7723-14-0)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Tin (7440-31-5)	
Bioaccumulative potential	Not applicable for inorganic substances.
Tungsten (W) (7440-33-7)	
Bioaccumulative potential	Not applicable for inorganic substances.
BCF - Fish [1]	0 – 1.23 l/kg (pH 7.2; ca. 7.5 g/L; Poecilia reticulata; EPA OPP 72-6)

molybdenum (7439-98-7)	
Bioaccumulative potential	Not established.

Graphite (7782-42-5)	
Bioaccumulative potential	Not bioaccumulative.

Silicon (7440-21-3)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

copper (7440-50-8)	
Ecology - soil	Adsorbs into the soil.

Cobalt (7440-48-4)	
Ecology - soil	No (test)data on mobility of the substance available.

Chromium (7440-47-3)	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.

Manganese (7439-96-5)	
Ecology - soil	No (test)data on mobility of the substance available.

nickel (7440-02-0)	
Surface tension	No data available in the literature
Ecology - soil	No (test)data on mobility of the substance available.

red phosphorus (7723-14-0)	
Ecology - soil	No (test)data on mobility of the substance available. Not toxic to plants.

Tin (7440-31-5)	
Surface tension	Not applicable (water solubility < 1 mg/l)
Ecology - soil	Adsorbs into the soil.

Tungsten (W) (7440-33-7)	
Surface tension	Not required
Ecology - soil	Highly mobile in soil.
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0 (log Koc, Literature study)

molybdenum (7439-98-7)	
Ecology - soil	Adsorbs into the soil.

Silicon (7440-21-3)	
Surface tension	No data available in the literature
Ecology - soil	Low potential for adsorption in soil.

12.5. Other adverse effects

Ozone	Not classified
Other information	Do not allow the product, as is, to spread into the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation	Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	Dispose in a safe manner in accordance with local/national regulations. Avoid release to the environment.
Ecological information	Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with TDG / DOT / IMDG / IATA

TDG	DOT	IMDG	IATA
14.1. UN number			
Not applicable	Not applicable	Not regulated	Not regulated
14.2. Proper Shipping Name			
Not applicable	Not applicable	Not regulated	Not regulated
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not regulated	Not regulated
14.4. Packing group			
Not applicable	Not applicable	Not regulated	Not regulated
14.5. Environmental hazards			
Not applicable	Not applicable	Not regulated	Not regulated
No supplementary information available			

14.6. Special precautions for user

TDG
Not applicable

DOT
Not applicable

IMDG
Not regulated

IATA
Not regulated

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. National regulations

Synthetic diamond impregnated segments	
Canada DSL NDSL Flags	All components of this product are listed, or excluded from listing, on the Canadian Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)

copper (7440-50-8)
Listed on the Canadian DSL (Domestic Substances List)

Cobalt (7440-48-4)
Listed on the Canadian DSL (Domestic Substances List)

Chromium (7440-47-3)
Listed on the Canadian DSL (Domestic Substances List)

Manganese (7439-96-5)
Listed on the Canadian DSL (Domestic Substances List)

nickel (7440-02-0)
Listed on the Canadian DSL (Domestic Substances List)

red phosphorus (7723-14-0)
Listed on the Canadian DSL (Domestic Substances List)

Tin (7440-31-5)
Listed on the Canadian DSL (Domestic Substances List)

Tungsten (W) (7440-33-7)
Listed on the Canadian DSL (Domestic Substances List)

Sulfur (7704-34-9)
Listed on the Canadian DSL (Domestic Substances List)

molybdenum (7439-98-7)
Listed on the Canadian DSL (Domestic Substances List)

Graphite (7782-42-5)
Listed on the Canadian DSL (Domestic Substances List)

Silicon (7440-21-3)
Listed on the Canadian DSL (Domestic Substances List)

SECTION 16: Other information

SDS Major/Minor	None
Issue date	03-24-2025
Revision date	03-24-2025
Supersedes	04-05-2024

Indication of changes			
Section	**Changed item**	**Change**	**Comments**
8.1	Occupational Exposure Limits	Modified	

Full text of H-statements:	
H228	Flammable solid.
H302	Harmful if swallowed.
H315	Causes skin irritation.
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.
H351	Suspected of causing cancer.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.

Abbreviations and acronyms:	
CAS-No.	Chemical Abstract Service number
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number

Abbreviations and acronyms:	
EC50	Median effective concentration
ED	Endocrine disrupting properties
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
IOELV	Indicative Occupational Exposure Limit Value
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
N.O.S.	Not Otherwise Specified
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
TRGS	Technical Rules for Hazardous Substances
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
WGK	Water Hazard Class
vPvB	Very Persistent and Very Bioaccumulative

SDS_CA_Hilti

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.