

Synthetic diamond impregnated segments

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date: 3/24/2025 Issue date: 3/24/2025 Supersedes: 4/5/2024 Version: 2.1

SECTION 1: Identification

1.1. Identification

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, Inc.
Legacy Tower, Suite 1000
7250 Dallas Parkway
US TX 75024 Plano
USA
T +1 9724035800
1-800-879-8000 toll free, F +1 918 254 0522
us-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
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SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. GHS Label elements, including precautionary statements

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

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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	Common Name (Synonyms)	Product identifier	%	GHS-US classification
copper	copper bronze, powder / copper, powder	CAS-No.: 7440-50-8	15 – 60	Not classified
Iron	iron / iron, chip / iron, foil / iron, granule / iron, wire	CAS-No.: 7439-89-6	10 – 60	Not classified
nickel	elemental nickel	CAS-No.: 7440-02-0	1 – 30	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
Tungsten (W)	tungsten / wolfram	CAS-No.: 7440-33-7	< 30	Not classified
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	alpha-tin / silver matt / tin	CAS-No.: 7440-31-5	3 – 10	Not classified
Chromium	chromium / chromium, metal	CAS-No.: 7440-47-3	<= 1	Not classified
Manganese	colloidal manganese / manganese / manganese, chip / manganese, elemental / manganese, flakes / manganese, metal / manganese, slabs	CAS-No.: 7439-96-5	<= 1	Not classified
red phosphorus	phosphorus / phosphorus, amorphous, red / phosphorus, red, amorphous	CAS-No.: 7723-14-0	0.1 – 1	Flam. Sol. 1, H228

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Name	Common Name (Synonyms)	Product identifier	%	GHS-US classification
Sulfur		CAS-No.: 7704-34-9	<= 1	Skin Irrit. 2, H315
molybdenum	molybdenum / molybdenum, powder	CAS-No.: 7439-98-7	<= 1	Not classified
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)

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.

4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media	Use extinguishing agent suitable for surrounding fire. Water. Sand. Foam. Carbon dioxide.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard	Not flammable.
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5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting	Do not enter fire area without proper protective equipment, including respiratory protection.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

No additional information available

6.3. Methods and material for containment and cleaning up

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

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection". For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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.

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.

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

Synthetic diamond impregnated segments	
No additional information available	
copper (7440-50-8)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Copper, as Cu
ACGIH OEL TWA	0.2 mg/m ³
Remark (ACGIH)	TLV® Basis: Irr; GI; metal fume fever
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Copper
OSHA PEL TWA	0.1 mg/m ³ (Fume (as Cu)) 1 mg/m ³ (Dusts and mists (as Cu))
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

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Cobalt (7440-48-4)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Cobalt and inorganic compounds as Co
ACGIH OEL TWA	0.02 mg/m ³
Remark (ACGIH)	Pneumonitis
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Cobalt and inorganic compounds
BEI	15 µg/l Parameter: Cobalt - Medium: urine - Sampling time: End of shift at end of workweek - Notations: Ns
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Cobalt metal, dust, and fume (as Co)
OSHA PEL TWA	0.1 mg/m ³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
Chromium (7440-47-3)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Metallic chromium, as Cr(0)
ACGIH OEL TWA	0.5 mg/m ³ (Inhalable fraction)
Remark (ACGIH)	TLV® Basis: Resp tract irr
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Chromium
BEI	0.7 µg/l Parameter: Total chromium - Medium: urine - Sampling time: End of shift at end of workweek - Notations: Pop
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Chromium
OSHA PEL TWA	0.5 mg/m ³ (II) compounds (as Cr) 0.5 mg/m ³ (III) compounds (as Cr) 1 mg/m ³ metal and insol. salts (as Cr)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
Iron (7439-89-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA	10 mg/m ³ as iron oxide dust or fume

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Manganese (7439-96-5)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Manganese
ACGIH OEL TWA	0.02 mg/m ³
Remark (ACGIH)	CNS impair; A4
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Manganese
OSHA PEL C	5 mg/m ³ compounds (as Mn) 5 mg/m ³ fume (as Mn)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
nickel (7440-02-0)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Nickel, elemental
ACGIH OEL TWA	1.5 mg/m ³ (Inhalable fraction)
Remark (ACGIH)	TLV® Basis: Dermatitis; pneumoconiosis. Notations: A5 (Not Suspected as a Human Carcinogen)
Regulatory reference	ACGIH 2024
USA - ACGIH - Biological Exposure Indices	
Local name	Nickel and inorganic compounds
BEI	5 µg/l Parameter: Nickel - Medium: urine after exposure to elemental Nickel and poorly soluble compounds - Sampling time: Post-shift at end of workweek - Notations: B 30 µg/l Parameter: Nickel - Medium: urine after exposure to soluble compounds - Sampling time: Post-shift at end of workweek - Notations: B
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Nickel
OSHA PEL TWA	1 mg/m ³ metal and insoluble compounds (as Ni) 1 mg/m ³ soluble compounds (as Ni)
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
red phosphorus (7723-14-0)	
USA - OSHA - Occupational Exposure Limits	
Local name	Phosphorus (yellow)
OSHA PEL TWA	0.1 mg/m ³
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

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Tin (7440-31-5)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Tin and inorganic compounds, excluding Tin hydride and Indium tin oxide, as Sn
ACGIH OEL TWA	2 mg/m ³ (Inhalable fraction)
Remark (ACGIH)	Non fibrous = TLV® Basis: URT irr Fibrous (including whiskers) = TLV® Basis: Mesothelioma; cancer. Notations: A2 (Suspected Human Carcinogen)
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Tin
OSHA PEL TWA	2 mg/m ³ (inorganic compounds (except oxides) (as Sn)) 0.1 mg/m ³ (organic compounds (as Sn))
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
Tungsten (W) (7440-33-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Tungsten and compounds, in the absence of Cobalt, as W
ACGIH OEL TWA	3 mg/m ³ (Respirable fraction)
Remark (ACGIH)	TLV® Basis: Lung dam
Regulatory reference	ACGIH 2024
Sulfur (7704-34-9)	
No additional information available	
molybdenum (7439-98-7)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Molybdenum, metal and insoluble compounds, as Mo
ACGIH OEL TWA	3 mg/m ³ (Respirable fraction) 10 mg/m ³ (Inhalable fraction)
Remark (ACGIH)	TLV® Basis: LRT irr
Regulatory reference	ACGIH 2024
USA - OSHA - Occupational Exposure Limits	
Local name	Molybdenum (as Mo)
OSHA PEL TWA	5 mg/m ³ Soluble compounds 15 mg/m ³ Insoluble Compounds - Total dust
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1
Graphite (7782-42-5)	
USA - ACGIH - Occupational Exposure Limits	
Local name	Graphite, all forms except graphite fibers
ACGIH OEL TWA	2 mg/m ³ (R - Respirable particulate matter)

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Graphite (7782-42-5)				
Remark (ACGIH)		TLV® Basis: Pneumoconiosis		
Regulatory reference		ACGIH 2025		
USA - OSHA - Occupational Exposure Limits				
Local name		Graphite (Natural)		
OSHA PEL TWA		15 mppcf		
Remark (OSHA)		Table Z-3. CAS No. source: eCFR Table Z-1.		
Regulatory reference (US-OSHA)		OSHA Annotated Table Z-3 Mineral Dusts		
Silicon (7440-21-3)				
USA - OSHA - Occupational Exposure Limits				
Local name		Silicon		
OSHA PEL TWA		15 mg/m³ (Total dust) 5 mg/m³ (Respirable fraction)		
Regulatory reference (US-OSHA)		OSHA Annotated Table Z-1		
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				

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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
Colour	Silver-grey to copper-colored
Odour	odourless
Odour threshold	No data available
pH	No data available
Melting point	No data available
Freezing point	No data available
Boiling point	No data available
Flash point	No data available
Relative evaporation rate (butylacetate=1)	No data available
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
Auto-ignition temperature	No data available
Decomposition temperature	> 400 °C
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive limits	No data available
Explosive properties	No data available
Oxidising properties	No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport. Product is not explosive.

10.2. Chemical stability

Stable under normal conditions.

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10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

No additional information available

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

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>)
Iron (7439-89-6)	
LD50 oral rat	98600 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male, Experimental value, Oral, 14 - 28 day(s))
LC50 Inhalation - Rat	> 0.25 mg/l (6 h, Rat, Male, Experimental value, Inhalation (dust), 28 day(s))
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

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nickel (7440-02-0)	
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/m ³ (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 sensitisation	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

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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/m ³ (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
Viscosity, kinematic	No data available
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

Cobalt (7440-48-4)	
LC50 - Fish [1]	> 100 (96h; Danio rerio; OECD 203)
EC50 72h - Algae [1]	0.035 mg/l (Pseudokirchnerella subcapitata)
ErC50 algae	0.144 mg/l
NOEC (acute)	3.2 mg/l (48h; Daphnia magna; OECD 202)
NOEC chronic crustacea	0.00683 mg/l
Chromium (7440-47-3)	
EC50 - Crustacea [1]	13.1 – 14.7 mg/l Test organisms (species): Daphnia magna

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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)
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.

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copper (7440-50-8)	
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
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)
Iron (7439-89-6)	
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)

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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.
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)	
BCF - Fish [1]	< 10 (Pisces, Fresh water, Literature study)
BCF - Other aquatic organisms [1]	< 300 (Invertebrata, Literature study)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Chromium (7440-47-3)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
Iron (7439-89-6)	
Bioaccumulative potential	Not bioaccumulative.
Manganese (7439-96-5)	
Bioaccumulative potential	not bioaccumulable.

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nickel (7440-02-0)	
BCF - Other aquatic organisms [1]	8 – 45 (\leq 4 week(s), <i>Cambarus</i> sp., Flow-through system, Fresh water, Experimental value, Fresh weight)
Bioaccumulative potential	Not applicable for inorganic substances.
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)	
BCF - Fish [1]	0 – 1.23 l/kg (pH 7.2; ca. 7.5 g/L; <i>Poecilia reticulata</i> ; EPA OPP 72-6)
Bioaccumulative potential	Not applicable for inorganic substances.
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.
Iron (7439-89-6)	
Surface tension	No data available in the literature
Ecology - soil	Low potential for mobility in soil.
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.

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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
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0 (log Koc, Literature study)
Ecology - soil	Highly mobile in soil.
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

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 DOT / TDG / IMDG / IATA

DOT	TDG	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

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DOT	TDG	IMDG	IATA
14.5. Environmental hazards			
Not applicable	Not applicable	Not regulated	Not regulated
No supplementary information available			

14.6. Special precautions for user

DOT

Not applicable

TDG

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. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

copper	CAS-No. 7440-50-8	15 – 60%
Cobalt	CAS-No. 7440-48-4	1 – 10%
Chromium	CAS-No. 7440-47-3	< 1%
Manganese	CAS-No. 7439-96-5	< 1%
nickel	CAS-No. 7440-02-0	1 – 30%
red phosphorus	CAS-No. 7723-14-0	0.1 – 1%

copper (7440-50-8)

CERCLA RQ	5000 lb
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Chromium (7440-47-3)

CERCLA RQ	5000 lb
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nickel (7440-02-0)

CERCLA RQ	100 lb
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red phosphorus (7723-14-0)	
Listed on EPA Hazardous Air Pollutant (HAPS)	
CERCLA RQ	1 lb
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	100 lb

15.2. International regulations

Cobalt (7440-48-4)	
Listed on IARC (International Agency for Research on Cancer)	
Listed as carcinogen on NTP (National Toxicology Program)	

nickel (7440-02-0)	
Listed on IARC (International Agency for Research on Cancer)	
Listed as carcinogen on NTP (National Toxicology Program)	

15.3. US State regulations

 **WARNING:** This product can expose you to Cobalt metal powder, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

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Revision date 03/24/2025

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

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Abbreviations and acronyms	
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
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)

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Abbreviations and acronyms	
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
WGK	Water Hazard Class
vPvB	Very Persistent and Very Bioaccumulative

NFPA health hazard

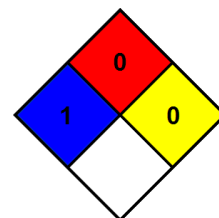
1 - Materials that, under emergency conditions, can cause significant irritation.

NFPA fire hazard

0 - Materials that will not burn under typical fire conditions, including intrinsically noncombustible materials such as concrete, stone, and sand.

NFPA reactivity

0 - Material that in themselves are normally stable, even under fire conditions.



Hazard Rating

Health

1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

0 Minimal Hazard - Materials that will not burn

Physical

0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

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

SDS_US_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.