

Diamond impregnated segments

Safety Data Sheet

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

Date of issue: 10/24/2018

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Version: 1.2

SECTION 1: Identification

1.1. Identification

Product form	Diamond impregnated segments
Trade name	Diamond Bits/Blades
Product code	BU Diamond

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

Use of the substance/mixture	Cutting of different kinds of materials
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1.3. Details of the supplier of the safety data sheet

Supplier Hilti, Inc. Legacy Tower, Suite 1000 7250 Dallas Parkway TX 75024 Plano - USA T +1 9724035800 1-800-879-8000 toll free - F +1 918 254 0522	Department issuing data specification sheet Hilti Entwicklungsgesellschaft mbH Hiltistraße 6 86916 Kaufering - Deutschland T +49 8191 906310 - F +49 8191 90176310 anchor.hse@hilti.com
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1.4. Emergency telephone number

Emergency number	Chem-Trec Tel.: 1 800 424 9300 (USA, PR, Virgin Islands, Canada) Tel.: 703 527 3887 (Other countries) +1 918 8723000 1-800-879-8000 toll free
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SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Not classified

2.2. Label elements

GHS-US labelling

No labelling applicable

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Diamond impregnated segments

Safety Data Sheet

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

Name	Product identifier	%	GHS-US classification
copper, powder	(CAS-No.) 7440-50-8	0.1 - 90	Aquatic Acute 1, H400 Aquatic Chronic 3, H412
iron	(CAS-No.) 7439-89-6	0.1 - 90	Not classified
nickel	(CAS-No.) 7440-02-0	0.1 - 50	Skin Sens. 1, H317 Carc. 2, H351 STOT RE 1, H372
tungsten	(CAS-No.) 7440-33-7	0.1 - 50	Not classified
cobalt	(CAS-No.) 7440-48-4	0.1 - 30	Resp. Sens. 1, H334 Skin Sens. 1, H317 Carc. 2, H351 Aquatic Chronic 4, H413
tungsten carbide	(CAS-No.) 12070-12-1	0.1 - 10	Carc. 1B, H350 STOT RE 2, H373
chromium	(CAS-No.) 7440-47-3	0.1 - 5	Not classified
zinc powder - zinc dust (stabilised)	(CAS-No.) 7440-66-6	0.1 - 5	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Diamond	(CAS-No.) 7782-40-3	0.1 - 5	Not classified
tin	(CAS-No.) 7440-31-5	<= 3	Not classified
manganese	(CAS-No.) 7439-96-5	<= 2	Not classified
molybdenum	(CAS-No.) 7439-98-7	0.1 - 1	Aquatic Acute 1, H400
phosphorus, red	(CAS-No.) 7723-14-0	<= 1	Flam. Sol. 1, H228 Aquatic Chronic 3, H412
graphite	(CAS-No.) 7782-42-5	0.1 - 1	Not classified

Full text of 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

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water. Sand. Foam. Carbon dioxide.
Unsuitable extinguishing media	Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard	Not flammable.
Reactivity	The product is non-reactive under normal conditions of use, storage and transport. Product is not explosive.

5.3. Advice for firefighters

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

Safety Data Sheet

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

tungsten carbide (12070-12-1)		
ACGIH	ACGIH TWA (mg/m ³)	3 mg/m ³ (Respirable fraction)
zinc powder - zinc dust (stabilised) (7440-66-6)		
ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
chromium (7440-47-3)		
ACGIH	ACGIH TWA (mg/m ³)	0.5 mg/m ³
Diamond (7782-40-3)		
Not applicable		
molybdenum (7439-98-7)		
ACGIH	ACGIH TWA (mg/m ³)	3 mg/m ³ (Respirable fraction) 10 mg/m ³ (Inhalable fraction)
manganese (7439-96-5)		
ACGIH	ACGIH TWA (mg/m ³)	0.02 mg/m ³
ACGIH	Remark (ACGIH)	CNS impair; A4
phosphorus, red (7723-14-0)		
OSHA	OSHA PEL (TWA) (mg/m ³)	0.1 mg/m ³
graphite (7782-42-5)		
ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³ (Respirable fraction)

8.2. Exposure controls

Appropriate engineering controls
Personal protective equipment

Ensure good ventilation of the work station.
Dust formation: dust mask. In case of dust production: protective goggles.



Hand protection
Eye protection
Skin and body protection
Respiratory protection

Wear leather gloves.
Safety glasses.
Wear suitable protective clothing.
Where exposure through inhalation may occur from use, respiratory protection equipment is recommended.

Consumer exposure controls
Other information

Avoid contact during pregnancy/while nursing.
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
Colour

Solid
Mixture contains one or more component(s) which have the following colour(s):
Metallic red On exposure to air: turns green Silvery-grey to black Silvery Metallic silvery-grey or silvery-white Metallic grey or red-grey Metallic silvery-white Metallic grey-black Metallic white to silvery Red to brown Silvery-white to grey Grey Grey to black Light grey Grey-black

Diamond impregnated segments

Safety Data Sheet

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

Odour	There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Odourless Garlic odour
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
Explosive limits	No data available
Explosive properties	No data available
Oxidising properties	No data available
Vapour pressure	No data available
Relative density	No data available
Relative vapour density at 20 °C	No data available
Solubility	insoluble in water.
Log Pow	No data available
Auto-ignition temperature	No data available
Decomposition temperature	> 400 °C
Viscosity	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	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.

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

Diamond impregnated segments

Safety Data Sheet

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

STOT-repeated exposure	Not classified
Aspiration hazard	Not classified
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

copper, powder (7440-50-8)	
LC50 fish 1	200 µg/l (96 h, Salmo gairdneri, Flow-through system, Fresh water, Weight of evidence, Lethal)
EC50 Daphnia 1	109 - 798 µg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Weight of evidence, Locomotor effect)

tin (7440-31-5)	
LC50 fish 1	> 12.4 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Static system, Fresh water, Experimental value, GLP)
ErC50 (algae)	> 19.2 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Salt water, Experimental value, GLP)

zinc powder - zinc dust (stabilised) (7440-66-6)	
LC50 fish 1	0.169 mg/l (Other, 96 h, Oncorhynchus mykiss, Static system, Fresh water, Read-across, Zinc ion)
EC50 Daphnia 1	1.833 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Zinc ion)
LC50 fish 2	0.78 mg/l (96 h, Pimephales promelas, Static system, Fresh water, Read-across)
ErC50 (algae)	0.15 mg/l

molybdenum (7439-98-7)	
LC50 fish 1	0.79 mg/l (672 h, Salmo gairdneri)

phosphorus, red (7723-14-0)	
LC50 fish 1	33.2 mg/l (96 h, Brachydanio rerio, Nominal concentration)
EC50 Daphnia 1	10.5 mg/l (48 h, Daphnia magna, Nominal concentration)

graphite (7782-42-5)	
LC50 fish 1	> 100 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Static system, Fresh water, Experimental value, Lethal)
EC50 Daphnia 1	> 100 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Behaviour)

12.2. Persistence and degradability

copper, powder (7440-50-8)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

iron (7439-89-6)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.

Diamond impregnated segments

Safety Data Sheet

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

iron (7439-89-6)	
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
tungsten (7440-33-7)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
nickel (7440-02-0)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
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.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
tin (7440-31-5)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable (inorganic)
Chemical oxygen demand (COD)	Not applicable (inorganic)
ThOD	Not applicable (inorganic)
tungsten carbide (12070-12-1)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
zinc powder - zinc dust (stabilised) (7440-66-6)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable
chromium (7440-47-3)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable

Diamond impregnated segments

Safety Data Sheet

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

chromium (7440-47-3)	
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

molybdenum (7439-98-7)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

manganese (7439-96-5)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

phosphorus, red (7723-14-0)	
Persistence and degradability	Biodegradability in soil: not applicable. Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

graphite (7782-42-5)	
Persistence and degradability	Biodegradability: not applicable.
Biochemical oxygen demand (BOD)	Not applicable
Chemical oxygen demand (COD)	Not applicable
ThOD	Not applicable
BOD (% of ThOD)	Not applicable

12.3. Bioaccumulative potential

copper, powder (7440-50-8)	
Bioaccumulative potential	Bioaccumulation: not applicable.

iron (7439-89-6)	
Log Pow	-0.77 (Estimated value)

tungsten (7440-33-7)	
Log Pow	0.23 (Estimated value)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

nickel (7440-02-0)	
Log Pow	-0.57 (Estimated value)
Bioaccumulative potential	Not bioaccumulative.

tin (7440-31-5)	
Bioaccumulative potential	Not bioaccumulative.

tungsten carbide (12070-12-1)	
Bioaccumulative potential	No bioaccumulation data available.

Diamond impregnated segments

Safety Data Sheet

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

zinc powder - zinc dust (stabilised) (7440-66-6)	
BCF other aquatic organisms 1	116 (21 day(s), Semi-static system, Salt water, Read-across)
Bioaccumulative potential	Bioaccumulation: not applicable.
chromium (7440-47-3)	
BCF fish 1	0.0048 (Pisces, Dry weight)
BCF other aquatic organisms 1	0.443 (Lamellibranchiata, Dry weight)
Bioaccumulative potential	Not bioaccumulative.
molybdenum (7439-98-7)	
BCF fish 1	260 - 500 (Tilapia rendalli)
Bioaccumulative potential	No bioaccumulation data available.
manganese (7439-96-5)	
BCF fish 1	81 (Pisces)
BCF other aquatic organisms 1	300000 (Mollusca)
BCF other aquatic organisms 2	125000 (Crustacea)
graphite (7782-42-5)	
Bioaccumulative potential	No bioaccumulation data available.

12.4. Mobility in soil

copper, powder (7440-50-8)	
Ecology - soil	Adsorbs into the soil.
iron (7439-89-6)	
Ecology - soil	Adsorbs into the soil.
tungsten (7440-33-7)	
Ecology - soil	Adsorbs into the soil.
nickel (7440-02-0)	
Surface tension	Not applicable (solid)
Ecology - soil	No (test)data on mobility of the substance available.
tin (7440-31-5)	
Ecology - soil	Adsorbs into the soil.
tungsten carbide (12070-12-1)	
Ecology - soil	Adsorbs into the soil.
zinc powder - zinc dust (stabilised) (7440-66-6)	
Ecology - soil	No (test)data on mobility of the substance available.
chromium (7440-47-3)	
Ecology - soil	Adsorbs into the soil.
molybdenum (7439-98-7)	
Ecology - soil	Adsorbs into the soil.
manganese (7439-96-5)	
Ecology - soil	Adsorbs into the soil.
phosphorus, red (7723-14-0)	
Ecology - soil	Not toxic to plants.

12.5. Other adverse effects

Other information

Do not allow the product, as is, to spread into the environment.

Diamond impregnated segments

Safety Data Sheet

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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste)	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.
Ecology - waste materials	Avoid release to the environment. Hazardous waste due to toxicity.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	RID
14.1. UN number			
Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name			
Not applicable	Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)			
Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group			
Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards			
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available			

14.6. Special precautions for user

- Overland transport

- Transport by sea

No data available

- Air transport

No data available

- Rail transport

Carriage prohibited (RID) No

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Diamond impregnated segments

Safety Data Sheet

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

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, powder	CAS-No. 7440-50-8	0.1 - 90%
nickel	CAS-No. 7440-02-0	0.1 - 50%
cobalt	CAS-No. 7440-48-4	0.1 - 30%
zinc powder - zinc dust (stabilised)	CAS-No. 7440-66-6	0.1 - 5%
chromium	CAS-No. 7440-47-3	0.1 - 5%
manganese	CAS-No. 7439-96-5	<= 2%
phosphorus, red	CAS-No. 7723-14-0	<= 1%

copper, powder (7440-50-8)	
CERCLA RQ	5000 lb

nickel (7440-02-0)	
CERCLA RQ	100 lb

zinc powder - zinc dust (stabilised) (7440-66-6)	
CERCLA RQ	1000 lb

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

phosphorus, red (7723-14-0)	
CERCLA RQ	1 lb
SARA Section 302 Threshold Planning Quantity (TPQ)	100 lb

15.2. International regulations

CANADA

No additional information available

EU-Regulations


No additional information available

National regulations

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

tungsten carbide (12070-12-1)
Listed on IARC (International Agency for Research on Cancer)

15.3. US State regulations

 **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.

Diamond impregnated segments

Safety Data Sheet

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

Component	Carcinogenicity	Developmental toxicity	Reproductive toxicity male	Reproductive toxicity female	No significant risk level (NSRL)	Maximum allowable dose level (MADL)
cobalt(7440-48-4)	X					
nickel(7440-02-0)	X					

Component	State or local regulations
copper, powder(7440-50-8)	
cobalt(7440-48-4)	
chromium(7440-47-3)	
iron(7439-89-6)	
manganese(7439-96-5)	
molybdenum(7439-98-7)	
nickel(7440-02-0)	
phosphorus, red(7723-14-0)	
tin(7440-31-5)	
tungsten(7440-33-7)	
tungsten carbide(12070-12-1)	
zinc powder - zinc dust (stabilised)(7440-66-6)	
Diamond(7782-40-3)	
graphite(7782-42-5)	

SECTION 16: Other information

Revision date

10/24/2018

Diamond impregnated segments

Safety Data Sheet

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

Full text of H-statements:

H228	Flammable solid.
H317	May cause an allergic skin reaction.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350	May cause cancer.
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

NFPA health hazard

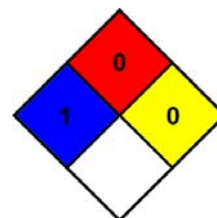
1 - Materials that, under emergency conditions, can cause significant irritation.

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
1	Name	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