

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

Reviewed on 09/08/2020

* 1 Identification

- **Product Identifier**
- **Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products**
- **Relevant identified uses of the substance or mixture and uses advised against:**
Use with coolant or enclosed machine with ventilation.
- **Product Description:** All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products .
- **Application of the substance / the mixture:** Cutting tool used to drill a hole or something similar.
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**
Allied Machine & Engineering Corp.
120 Deeds Drive
Dover, Ohio 44622-0036
Phone: 330-343-4283
Fax: 330-602-3400
www.alliedmachine.com
- **Emergency telephone number:** 330-343-4283

2 Hazard(s) Identification

- **Classification of the substance or mixture:**



Health hazard

- Resp. Sens. 1 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 Carc. 1B H350 May cause cancer. Route of exposure: Inhalation.
 Repr. 1 H360 May damage fertility or the unborn child.
 STOT RE 1 H372 Causes damage to the respiratory system through prolonged or repeated exposure.
 Route of exposure: Inhalation.



- Skin Irrit. 2 H315 Causes skin irritation.
 Eye Irrit. 2A H319 Causes serious eye irritation.
 Skin Sens. 1 H317 May cause an allergic skin reaction.
 STOT SE 3 H335 May cause respiratory irritation.

- **Label elements:**
- **Hazard pictograms:**



- **Signal word:** Danger
- **Hazard-determining components of labeling:**
Tungsten Carbide
Cobalt
Diamond
nickel
- **Hazard statements:**
H315 Causes skin irritation.

(Contd. on page 2)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

Reviewed on 09/08/2020

Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

- H319 Causes serious eye irritation.
- H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- H317 May cause an allergic skin reaction.
- H350 May cause cancer. Route of exposure: Inhalation.
- H360 May damage fertility or the unborn child.
- H335 May cause respiratory irritation.
- H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

Precautionary statements:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P264 Wash thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P284 [In case of inadequate ventilation] wear respiratory protection.
- P302+P352 If on skin: Wash with plenty of water.
- P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 IF exposed or concerned: Get medical advice/attention.
- P312 Call a poison center/doctor if you feel unwell.
- P321 Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
- P314 Get medical advice/attention if you feel unwell.
- P362+P364 Take off contaminated clothing and wash it before reuse.
- P332+P313 If skin irritation occurs: Get medical advice/attention.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P342+P311 If experiencing respiratory symptoms: Call a poison center/doctor.
- P363 Wash contaminated clothing before reuse.
- P403+P233 Store in a well-ventilated place. Keep container tightly closed.
- P405 Store locked up.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

Unknown acute toxicity:

This value refers to knowledge of known, established toxicological or ecotoxicological values. 126 % of the mixture consists of component(s) of unknown toxicity.

Classification system: NFPA/HMIS Definitions: 0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme

NFPA ratings (scale 0 - 4)



HMIS-ratings (scale 0 - 4)



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· **Hazard(s) not otherwise classified (HNOC):** None known

3 Composition/Information on Ingredients

· **Non-hazardous components:**

12069-89-5	Molybdenum Carbide	0-15%
12011-99-3	Niobium Carbide	0-12%

· **Chemical characterization: Substance**

· **Description:** Mixture of substances listed below with non-hazardous additions.

· **Dangerous Components:**

CAS: 12070-12-1 RTECS: YO 7250000	Tungsten Carbide ☠ Carc. 1B, H350	65-97%
CAS: 7782-40-3	Diamond ⚠ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320	0-50%
CAS: 10043-11-5	Boron Nitride ⚠ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320	0-50%
CAS: 12070-06-3	Tantalum Carbide	0-50%
CAS: 7440-48-4 RTECS: GF 8750000	Cobalt ☠ Resp. Sens. 1, H334; Muta. 2, H341; Carc. 1B, H350; Repr. 1B, H360; ⚠ Skin Sens. 1, H317; Aquatic Chronic 4, H413; Combustible Dust	2-30%
CAS: 7440-02-0	nickel ☠ Carc. 2, H351; STOT RE 1, H372; ⚠ Skin Sens. 1, H317; Aquatic Acute 3, H402	0-20%
CAS: 12070-08-5	Titanium Carbide ⚠ Skin Irrit. 2, H315; STOT SE 3, H335; Eye Irrit. 2B, H320	0-13%
CAS: 12012-35-0	Chromium Carbide	0-5.1%
CAS: 7440-47-3 RTECS: GB 4200000	Chromium	0-3%
CAS: 1303-86-2 RTECS: ED 7900000	diboron trioxide ☠ Repr. 1B, H360	0-2%
CAS: 1309-37-1 RTECS: NO 7400000	Ferric oxide ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335	0-2%
CAS: 7439-98-7 RTECS: QA 4680000	Molybdenum	0-2%
CAS: 7440-67-7 RTECS: ZH 7070000	Zirconium ⚠ Pyr. Sol. 1, H250; Water-react. 1, H260	0-2%

· **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

The finished product may be coated with any one or more of the following material(s):

Material	CAS #
Aluminum Oxide	1344-28-1
Titanium Aluminum Nitride	108398-79-4
Titanium Nitride	25583-20-4
Titanium Carbonitride	12627-33-7
Aluminum Chromium Nitride	880098-18-0

(Contd. on page 4)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

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Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

4 First-Aid Measures

- **Description of first aid measures**
- **General information:**
Symptoms of poisoning may occur after exposure to dust, fumes or particulates; seek medical attention if feeling unwell.
- **After inhalation:** In case of unconsciousness place patient stably in the side position for transportation.
- **After skin contact:**
Immediately wash with water and soap and rinse thoroughly.
If skin irritation occurs, consult a doctor.
Wash with soap and water.
- **After eye contact:**
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
If easy to do so, remove contact lenses if worn.
If eye irritation occurs, consult a doctor.
- **After swallowing:**
Wash out mouth with water provided person is conscious. Never give anything by mouth to an unconscious person. Get medical attention.
If swallowed and symptoms occur, consult a doctor.
- **Information for doctor**
- **Most important symptoms and effects, both acute and delayed:** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed:**
No further relevant information available.

5 Fire-Fighting Measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
For powder fires smother with dry sand, dry dolomite, ABC type fire extinguisher, or flood with water.
- **For safety reasons unsuitable extinguishing agents:** No further relevant information.
- **Special hazards arising from the substance or mixture:**
Moderate fire hazard when it is in the form of a dust (powder) and burns rapidly when heated in flame. Chromium is attacked vigorously by fused potassium chlorate producing vivid incandescence. Pyrophoric chromium unites with nitric oxide with incandescence. Incandescent reaction with nitrogen oxide or sulfur dioxide.

Special Remarks on Explosion Hazards:

Powdered Chromium metal +fused ammonium nitrate may react violently or explosively. Powdered Chromium will explode spontaneously in air.

Hard cemented carbide product is not a fire hazard, under normal conditions of use. Dusts generated in grinding operations may be sensitive to static discharge or ignite if allowed to accumulate, and subjected to an ignition source. Dusts may present a fire or explosion hazard under rare favoring conditions of particle size, dispersion, concentration, and strong ignition source. However, this is not expected to be a problem under normal handling conditions.

- **Advice for firefighters**
- **Special protective equipment for firefighters:**
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.
For a powder fire confined to a small area, use a respirator approved for toxic dusts and fumes. For a large fire, firefighters should use self-contained breathing apparatus.

(Contd. on page 5)

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OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

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· **Additional information:**

At temperatures above 200°C Zirconium reacts exothermically with the following: fluorine, chloride, bromide, iodine, halocarbons, carbon tetrachloride, carbon, tetra fluoride and Freon's.
Oxides of aluminum, cobalt, titanium, and tungsten; carbon dioxide, and carbon monoxide. See Section IV for specific hazard identification.

6 Accidental Release Measures

· **Personal precautions, protective equipment and emergency procedures:** Not required.

· **Environmental precautions:** Do not allow product to reach sewage system or any water course.

· **Methods and material for containment and cleaning up:**

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Dispose of the collected material according to regulations.

Clean up using methods which avoid dust generation such as vacuum (with appropriate filter to prevent airborne dust levels which exceed the PEL or TLV), wet dust mop or web clean-up.

· **Reference to other sections:**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

· **Protective Action Criteria for Chemicals**

· **PAC-1:**

12070-12-1	Tungsten Carbide	11 mg/m ³
7782-40-3	Diamond	6.3 mg/m ³
12070-06-3	Tantalum Carbide	11 mg/m ³
7440-48-4	Cobalt	0.18 mg/m ³
7440-02-0	nickel	4.5 mg/m ³
12070-08-5	Titanium Carbide	30 mg/m ³
7440-47-3	Chromium	1.5 mg/m ³
1303-86-2	diboron trioxide	30 mg/m ³
1309-37-1	Ferric oxide	15 mg/m ³
7439-98-7	Molybdenum	30 mg/m ³
7440-67-7	Zirconium	10 mg/m ³
7440-58-6	hafnium	1.5 mg/m ³
1344-28-1	Aluminium Oxide	15 mg/m ³

· **PAC-2:**

12070-12-1	Tungsten Carbide	120 mg/m ³
7782-40-3	Diamond	69 mg/m ³
12070-06-3	Tantalum Carbide	120 mg/m ³
7440-48-4	Cobalt	2 mg/m ³
7440-02-0	nickel	50 mg/m ³
12070-08-5	Titanium Carbide	330 mg/m ³
7440-47-3	Chromium	17 mg/m ³
1303-86-2	diboron trioxide	100 mg/m ³
1309-37-1	Ferric oxide	360 mg/m ³
7439-98-7	Molybdenum	330 mg/m ³
7440-67-7	Zirconium	83 mg/m ³

(Contd. on page 6)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

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Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

7440-58-6	hafnium	17 mg/m ³
1344-28-1	Aluminium Oxide	170 mg/m ³
· PAC-3:		
12070-12-1	Tungsten Carbide	730 mg/m ³
7782-40-3	Diamond	1,100 mg/m ³
12070-06-3	Tantalum Carbide	730 mg/m ³
7440-48-4	Cobalt	20 mg/m ³
7440-02-0	nickel	99 mg/m ³
12070-08-5	Titanium Carbide	2,000 mg/m ³
7440-47-3	Chromium	99 mg/m ³
1303-86-2	diboron trioxide	620 mg/m ³
1309-37-1	Ferric oxide	2,200 mg/m ³
7439-98-7	Molybdenum	2,000 mg/m ³
7440-67-7	Zirconium	500 mg/m ³
7440-58-6	hafnium	99 mg/m ³
1344-28-1	Aluminium Oxide	990 mg/m ³

7 Handling and Storage

· Handling

· Precautions for safe handling:

Avoid creating and breathing dust/fume/gas/mist/vapors/spray.
 Ensure good ventilation/exhaustion at the workplace.
 Open and handle receptacle with care.
 Prevent formation of dust.

· Information about protection against explosions and fires: Keep protective respiratory device available.

· Conditions for safe storage, including any incompatibilities

· Storage

- Requirements to be met by storerooms and receptacles:** Store in a cool, dry place.
- Information about storage in one common storage facility:** Not required.
- Further information about storage conditions:** Keep receptacle tightly sealed.
- Specific end use(s):** No further relevant information available.

8 Exposure Controls/Personal Protection

· Additional information about design of technical systems: No further data; see section 7.

· Control parameters:

· Components with occupational exposure limits:

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.
 At this time, the other constituents have no known exposure limits.

12070-12-1 Tungsten Carbide

REL	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ as W
TLV	Long-term value: 3* mg/m ³ as W; * respirable fraction

(Contd. on page 7)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

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Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

12070-06-3 Tantalum Carbide	
TWA	Short-term value: 10 mg/m ³
7440-48-4 Cobalt	
PEL	Long-term value: 0.1* mg/m ³ as Co; *for metal dust and fume
REL	Long-term value: 0.05 mg/m ³ as Co; metal dust & fume
TLV	Long-term value: 0.02* mg/m ³ *inh. fraction; DSEN, RSEN, BEI
7440-02-0 nickel	
PEL	Long-term value: 1 mg/m ³
REL	Long-term value: 0.015 mg/m ³ as Ni; See Pocket Guide App. A
TLV	Long-term value: 1.5* mg/m ³ elemental, *inhalable fraction
12012-35-0 Chromium Carbide	
OSHA TWA	Short-term value: 0.5 mg/m ³ Long-term value: 1.0 mg/m ³
7440-47-3 Chromium	
PEL	Long-term value: 1 mg/m ³
REL	Long-term value: 0.5* mg/m ³ *metal+inorg.compds.as Cr; See Pocket Guide App. C
TLV	Long-term value: 0.003* 0.5** mg/m ³ inh. fraction, *as Cr(III), **metal
1303-86-2 diboron trioxide	
PEL	Long-term value: 15* mg/m ³ *total dust
REL	Long-term value: 10 mg/m ³
TLV	Long-term value: 10 mg/m ³
1309-37-1 Ferric oxide	
PEL	Long-term value: 10* mg/m ³ *Fume
REL	Long-term value: 5 mg/m ³ Dust & fume, as Fe
TLV	Long-term value: 5* mg/m ³ *as respirable fraction
7439-98-7 Molybdenum	
PEL	Long-term value: 15* mg/m ³ *Total dust, as Mo
TLV	Long-term value: 10* 3** mg/m ³ as Mo; *inhalable fraction ** respirable fraction
7440-67-7 Zirconium	
PEL	Long-term value: 5 mg/m ³ as Zr
REL	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ as Zr

(Contd. on page 8)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

Reviewed on 09/08/2020

Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

TLV	Short-term value: 10 mg/m ³ Long-term value: 5 mg/m ³ as Zr
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· Ingredients with biological limit values:
7440-48-4 Cobalt

BEI	15 µg/L urine end of shift at end of workweek Cobalt (background)
	1 µg/L blood end of shift at end of workweek Cobalt (background, semi-quantitative)

· **Additional information:** The lists that were valid during the creation of this SDS were used as basis.

· **Exposure controls:**

· **Personal protective equipment**

· **General protective and hygienic measures:**

- Use adequate exhaust ventilation to prevent inhalation of dust particles.
- Keep away from foodstuffs, beverages and feed.
- Immediately remove all soiled and contaminated clothing and wash before reuse.
- Wash hands before breaks and at the end of work.
- Store protective clothing separately.
- Avoid contact with the eyes and skin.

· **Breathing equipment:**



NIOSH/OSHA or EN approved respiratory protection is recommended for use in airborne concentrations exceeding exposure limits.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

· **Material of gloves:**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material cannot be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material:**

The exact break-through time has to be determined and observed by the manufacturer of the protective gloves.

· **Eye protection:**



Tightly sealed goggles

· **Limitation and supervision of exposure into the environment:** None

(Contd. on page 9)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

Reviewed on 09/08/2020

Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

9 Physical and Chemical Properties

- **Information on basic physical and chemical properties**

- **General Information**

- **Appearance:**

- **Form:** Solid

- **Color:** Gray to black to bright metallic. Some grades are gold colored.

- **Odor:** Odorless

- **Odor threshold:** Not determined.

- **pH-value:** Not applicable.

- **Change in condition**

- **Melting point/Melting range:** Not determined.

- **Boiling point/Boiling range:** Not determined.

- **Flash point:** None

- **Flammability (solid, gaseous):** Not determined.

- **Ignition temperature:** Not applicable

- **Decomposition temperature:** Not determined.

- **Auto igniting:** Product is not self-igniting.

- **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**

- **Lower:** Not determined.

- **Upper:** Not determined.

- **Vapor pressure:** Not applicable.

- **Density:**

- **Relative density:** Not determined.

- **Vapor density:** Not applicable.

- **Evaporation rate:** Not applicable.

- **Solubility in / Miscibility with:**

- **Water:** Insoluble.

- **Partition coefficient (n-octanol/water):** Not determined.

- **Viscosity:**

- **Dynamic:** Not applicable.

- **Kinematic:** Not applicable.

- **Solvent content:**

- **VOC content:** 0.00 %

- **Other information:** No further relevant information available.

10 Stability and Reactivity

- **Reactivity:** No further relevant information available.

- **Chemical stability:** Stable under normal conditions.

- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.

- **Possibility of hazardous reactions:** No dangerous reactions known.

- **Conditions to avoid:** Strong Acids

(Contd. on page 10)

Safety Data Sheet (SDS)

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Issue date 09/08/2020

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Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

- **Incompatible materials:**
Avoid Strong Acids. Contact of dust with strong oxidizers may cause fire or explosions.
- **Hazardous decomposition products:** Toxic chromium oxide fumes.

11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
7782-40-3 Diamond		
Oral	LD50	10,000 mg/kg (Mouse)
7440-48-4 Cobalt		
Oral	LD50	6,170 mg/kg (Rat)
7440-47-3 Chromium		
Inhalative	LC50/96 hours	14.3 mg/l (Cyprinus carpio)
1309-37-1 Ferric oxide		
Oral	LD50	>5,000 mg/kg (Rat)
7439-98-7 Molybdenum		
Oral	LD50	>5,000 mg/kg (Rat)
Dermal	LD50	>2,000 mg/kg (Rat)
Inhalative	LC50/4 h	800 mg/l (Trout)
		>5.84 mg/l (Rat)

- **Primary irritant effect:**
- **On the skin:**
Irritant to skin and mucous membranes.
May cause an allergic skin reaction.
- **On the eye:** Irritating effect.
- **Sensitization:**
Sensitization possible through inhalation.
Sensitization possible through skin contact.
- **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant
- **Carcinogenic categories:**
- **IARC (International Agency for Research on Cancer):**
Group 1 - Carcinogenic to humans
Group 2A - Probably carcinogenic to humans
Group 2B - Possibly carcinogenic to humans
Group 3 - Not classifiable as to its carcinogenicity to humans
Group 4 - Probably not carcinogenic to humans

12070-12-1	Tungsten Carbide	2A
7440-48-4	Cobalt	2B
7440-02-0	nickel	2B
7440-47-3	Chromium	3
1309-37-1	Ferric oxide	3

(Contd. on page 11)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

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Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

· NTP (National Toxicology Program):		
7440-48-4	Cobalt	R
7440-02-0	nickel	R
· OSHA-Ca (Occupational Safety & Health Administration):		
None of the ingredients are listed.		

12 Ecological Information

 · **Toxicity:**

· Aquatic toxicity:	
7440-02-0 nickel	
EC50	1 mg/l (Water flea)
7440-47-3 Chromium	
EC50	0.07 mg/l (Water flea)

 · **Persistence and degradability:** No further relevant information available.

 · **Behavior in environmental systems:**

 · **Bioaccumulative potential:** No further relevant information available.

 · **Mobility in soil:** No further relevant information available.

 · **Additional ecological information:**

 · **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

 · **Results of PBT and vPvB assessment:**

 · **PBT:** Not applicable.

 · **vPvB:** Not applicable.

 · **Other adverse effects:** No further relevant information available.

13 Disposal Considerations

 · **Waste treatment methods**

 · **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Observe all federal, state and local environmental regulations when disposing of this material.

 · **Uncleaned packaging**

 · **Recommendation:** Disposal must be made according to official regulations.

14 Transport Information

 · **UN-Number:**

 · **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material

 · **UN proper shipping name:**

 · **DOT, ADR/ADN, ADN, IMDG, IATA** Non-Regulated Material

 · **Transport hazard class(es):**

 · **DOT, ADR/ADN, ADN, IMDG, IATA**

 · **Class:** Non-Regulated Material

 · **Packing group:**

 · **DOT, ADR/ADN, IMDG, IATA** Non-Regulated Material

 · **Environmental hazards:** Not applicable.

 · **Special precautions for user:** Not applicable.

 · **Transport in bulk according to Annex II of**
MARPOL73/78 and the IBC Code: Not applicable.

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OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

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Reviewed on 09/08/2020

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 · **UN "Model Regulation":** Non-Regulated Material

15 Regulatory Information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture:**
- **SARA (Superfund Amendments and Reauthorization):**

· Section 355 (extremely hazardous substances): None of the ingredients are listed.

· Section 313 (Specific toxic chemical listings):	
7440-48-4	Cobalt
7440-02-0	nickel
7440-47-3	Chromium
1344-28-1	Aluminium Oxide

· TSCA (Toxic Substances Control Act):		
12070-12-1	Tungsten Carbide	ACTIVE
7782-40-3	Diamond	ACTIVE
10043-11-5	Boron Nitride	ACTIVE
12070-06-3	Tantalum Carbide	ACTIVE
7440-48-4	Cobalt	ACTIVE
7440-02-0	nickel	ACTIVE
12069-89-5	Molybdenum Carbide	ACTIVE
12070-08-5	Titanium Carbide	ACTIVE
12011-99-3	Niobium Carbide	ACTIVE
12012-35-0	Chromium Carbide	ACTIVE
7440-47-3	Chromium	ACTIVE
1303-86-2	diboron trioxide	ACTIVE
1309-37-1	Ferric oxide	ACTIVE
7439-98-7	Molybdenum	ACTIVE
7440-67-7	Zirconium	ACTIVE
7440-58-6	hafnium	ACTIVE
1344-28-1	Aluminium Oxide	ACTIVE
25583-20-4	Titanium nitride	ACTIVE

· Hazardous Air Pollutants	
7440-48-4	Cobalt

- **California Proposition 65:**



WARNING: This product can expose you to chemicals including the listed chemicals which are known to the State of California to cause cancer, birth defects and/or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

· Chemicals known to cause cancer:	
7440-48-4	Cobalt
7440-02-0	nickel

· Chemicals known to cause reproductive toxicity for females: None of the ingredients are listed.	
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(Contd. on page 13)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

Reviewed on 09/08/2020

Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

· Chemicals known to cause reproductive toxicity for males:		
None of the ingredients are listed.		
· Chemicals known to cause developmental toxicity:		
None of the ingredients are listed.		
· New Jersey Right-to-Know List:		
12070-12-1	Tungsten Carbide	
7440-48-4	Cobalt	
7440-02-0	nickel	
7440-47-3	Chromium	
1303-86-2	diboron trioxide	
1309-37-1	Ferric oxide	
7439-98-7	Molybdenum	
7440-67-7	Zirconium	
7440-58-6	hafnium	
1344-28-1	Aluminium Oxide	
· New Jersey Special Hazardous Substance List:		
7440-48-4	Cobalt	CA, F3
7440-02-0	nickel	CA
7440-47-3	Chromium	F3
7440-67-7	Zirconium	F4, R1
7440-58-6	hafnium	F3, R3
· Pennsylvania Right-to-Know List:		
7440-48-4	Cobalt	
7440-02-0	nickel	
7440-47-3	Chromium	
1303-86-2	diboron trioxide	
1309-37-1	Ferric oxide	
7439-98-7	Molybdenum	
7440-67-7	Zirconium	
7440-58-6	hafnium	
1344-28-1	Aluminium Oxide	
· Pennsylvania Special Hazardous Substance List:		
7440-48-4	Cobalt	E
7440-02-0	nickel	ES
7440-47-3	Chromium	ES
1344-28-1	Aluminium Oxide	E
· Carcinogenic categories:		
· EPA (Environmental Protection Agency):		
10043-11-5	Boron Nitride	I (oral)
7440-47-3	Chromium	D
1303-86-2	diboron trioxide	I (oral)

(Contd. on page 14)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

Reviewed on 09/08/2020

Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

· TLV (Threshold Limit Value established by ACGIH):		
7440-48-4	Cobalt	A3
7440-02-0	nickel	A5
7440-47-3	Chromium	A4
1309-37-1	Ferric oxide	A4
7439-98-7	Molybdenum	A3
7440-67-7	Zirconium	A4
1344-28-1	Aluminium Oxide	A4
· NIOSH-Ca (National Institute for Occupational Safety and Health):		
7440-02-0	nickel	

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms:

· Signal word: Danger

· Hazard-determining components of labeling:

Tungsten Carbide
Cobalt
Diamond
nickel

· Hazard statements:

H315 Causes skin irritation.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317 May cause an allergic skin reaction.
H350 May cause cancer. Route of exposure: Inhalation.
H360 May damage fertility or the unborn child.
H335 May cause respiratory irritation.
H372 Causes damage to the respiratory system through prolonged or repeated exposure. Route of exposure: Inhalation.

· Precautionary statements:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P284 [In case of inadequate ventilation] wear respiratory protection.
P302+P352 If on skin: Wash with plenty of water.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

(Contd. on page 15)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

Reviewed on 09/08/2020

Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

P308+P313	IF exposed or concerned: Get medical advice/attention.
P312	Call a poison center/doctor if you feel unwell.
P321	Specific treatment (see supplementary first aid instructions on this Safety Data Sheet).
P314	Get medical advice/attention if you feel unwell.
P362+P364	Take off contaminated clothing and wash it before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a poison center/doctor.
P363	Wash contaminated clothing before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

None of the ingredients are listed.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of last revision/ revision number:** 09/08/2020 / 6

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road
 ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 ACGIH: American Conference of Governmental Industrial Hygienists
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 NFPA: National Fire Protection Association (USA)
 HMIS: Hazardous Materials Identification System (USA)
 VOC: Volatile Organic Compounds (USA, EU)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 vPvB: very Persistent and very Bioaccumulative
 NIOSH: National Institute for Occupational Safety and Health
 OSHA: Occupational Safety & Health Administration
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 BEI: Biological Exposure Limit
 Pyr. Sol. 1: Pyrophoric solids – Category 1
 Water-react. 1: Substances and mixtures which in contact with water emit flammable gases – Category 1
 Skin Irrit. 2: Skin corrosion/irritation – Category 2
 Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
 Eye Irrit. 2B: Serious eye damage/eye irritation – Category 2B
 Resp. Sens. 1: Respiratory sensitisation – Category 1
 Skin Sens. 1: Skin sensitisation – Category 1
 Muta. 2: Germ cell mutagenicity – Category 2
 Carc. 1B: Carcinogenicity – Category 1B
 Carc. 2: Carcinogenicity – Category 2
 Repr. 1: Reproductive toxicity – Category 1
 Repr. 1B: Reproductive toxicity – Category 1B

(Contd. on page 16)

Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) revised in 2012 and GHS Rev 03.

Issue date 09/08/2020

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Trade Name: All Cemented Carbide Grade Inserts, Drills, & Solid Carbide Products

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

STOT RE 1: Specific target organ toxicity (repeated exposure) – Category 1

Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3

Aquatic Chronic 4: Hazardous to the aquatic environment - long-term aquatic hazard – Category 4

· *** Data compared to the previous version altered.**

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