

Issuing Date 26-May-2015

Revision Date 26-May-2015

Revision Number 0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

GHS product identifier

Product Name CARBIDE INSERTED MANDRELS, SHOES and TOOL INSERTS

Other means of identification

Synonyms PRODUCT CODE 083

Recommended use of the chemical and restrictions on use

Recommended Use Tooling used in the honing process

Uses advised against Not for consumer use.

Supplier's details

Supplier Address
Sunnenn Products
7910 Manchester Road
Saint Louis, MO 63143
314-781-2100
Website: www.sunnenn.com

Emergency telephone number

Emergency Telephone Number 1 (314) 781-2100 8 a. m. - 3 p.m. C.S.T (US)
Email: SDS@sunnenn.com

2. HAZARDS IDENTIFICATION

Classification

Solid metallic products are generally classified as "articles" and do not constitute hazardous materials in solid form. However, downstream use of the article could result in some hazardous elements contained in these products to be emitted under certain processing conditions such as but not limited to: abrading, cutting, or grinding. The classification given below pertains to when used during these processes.

Respiratory Sensitization	Category 1
Skin Sensitization	Category 1
Carcinogenicity	Category 1B
Specific Target Organ Toxicity (Repeated Exposure)	Category 1

GHS Label elements, including precautionary statements

Emergency Overview

Signal Word	Danger
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Hazard Statements

- May cause allergy or asthma symptoms or breathing difficulties if inhaled
- May cause an allergic skin reaction
- May cause cancer
- Causes damage to organs through prolonged or repeated exposure

**Appearance** Metallic**Physical State** Solid (compressed).**Odor** None**Precautionary Statements****Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- Use personal protective equipment as required.
- In case of inadequate ventilation wear respiratory protection.
- Contaminated work clothing should not be allowed out of the workplace.
- Wear protective gloves.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wash face, hands and any exposed skin thoroughly after handling.
- Do not eat, drink or smoke when using this product.

General Advice

- If exposed or concerned: Get medical attention/advice
- Specific treatment (see supplemental instructions on the administration of antidotes on this label)

Skin

- IF ON SKIN: Wash with plenty of soap and water.
- If skin irritation or rash occurs: Get medical advice/attention.
- Wash contaminated clothing before reuse.

Inhalation

- IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing
- If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Storage

- Store locked up.

Disposal

- Dispose of contents/container to an approved waste disposal plant.

Hazard Not Otherwise Classified (HNOC)

Not applicable

Other information

Very toxic to aquatic life Very toxic to aquatic life with long lasting effects

0% of the mixture consists of ingredient(s) of unknown toxicity.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Synonyms**

PRODUCT IDENTIFIER SDS083

Chemical Name	CAS-No	Weight %	Trade secret
Tungsten carbide	12070-12-1	0-100	*

Molybdenum carbide (Mo ₂ C)	12069-89-5	0-30	*
Cobalt	7440-48-4	0-30	*
Nickel	7440-02-0	0-20	*
Zirconium carbide (ZrC)	12070-14-3	0-5	*
Chromium	7440-47-3	0-5	*
Zirconium	7440-67-7	0-2	*
Molybdenum	7439-98-7	0-2	*
Boron oxide	1303-86-2	0-2	*
Aluminum oxide	1344-28-1	0-2	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

Description of necessary first-aid measures

General Advice As solid objects honing tools do not present any hazards at normal temperatures. However when modified for use by abrading, grinding, cutting or processing in another fashion that creates potentially hazardous dust or fumes can result in exposure by inhalation, swallowing or come in contact with skin or eyes. The information below is for these instances.

Eye Contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Skin Contact Wash skin with soap and water. If skin irritation or rash occurs: Get medical advice/attention. Remove and wash contaminated clothing before re-use.

Inhalation IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Ingestion Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects Asthma-like and/ or skin allergy-like symptoms. Difficulty in breathing. Itching Coughing and/ or wheezing. Rashes

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician May cause sensitization of susceptible persons.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media None

Specific Hazards Arising from the Chemical

None known

Explosion Data

Sensitivity to Mechanical Impact

None.

Sensitivity to Static Discharge

None.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions As solid objects honing tools do not present any hazards at normal temperatures. However when modified for use by abrading, grinding, cutting or processing in another fashion that creates potentially hazardous dust or fumes can result in exposure by inhalation, swallowing or come in contact with skin or eyes. Avoid dust formation. Avoid contact with the skin and the eyes. Avoid inhalation of dust.

Environmental Precautions

Environmental Precautions Avoid release to the environment, metal fines produced from abrading, cutting, welding, sanding, burning, milling or grinding.

Methods and materials for containment and cleaning up

Methods for Containment Not applicable

Methods for Cleaning Up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling None required under normal usage. If exposed to dust: Ensure adequate ventilation. Do not breathe dust. In case of insufficient ventilation, wear suitable respiratory equipment. Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities

Storage Store in accordance with the particular national regulations

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines Occupational exposure limits apply to some of the components resulting from abrading, cutting or grinding producing dust or fumes.

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Tungsten carbide 12070-12-1	STEL: 10 mg/m ³ W TWA: 5 mg/m ³ W	(vacated) TWA: 5 mg/m ³ W (vacated) STEL: 10 mg/m ³ W	TWA: 5 mg/m ³ W STEL: 10 mg/m ³ W
Cobalt 7440-48-4	TWA: 0.02 mg/m ³	TWA: 0.1 mg/m ³ dust and fume (vacated) TWA: 0.05 mg/m ³ dust and fume	IDLH: 20 mg/m ³ dust and fume TWA: 0.05 mg/m ³ dust and fume
Molybdenum carbide (Mo ₂ C) 12069-89-5	TWA: 10 mg/m ³ Mo inhalable fraction TWA: 3 mg/m ³ Mo respirable fraction	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ Mo	IDLH: 5000 mg/m ³ Mo
Nickel 7440-02-0	TWA: 1.5 mg/m ³	TWA: 1 mg/m ³ (vacated) TWA: 1 mg/m ³	IDLH: 10 mg/m ³ TWA: 0.015 mg/m ³
Zirconium carbide (ZrC) 12070-14-3	STEL: 10 mg/m ³ Zr TWA: 5 mg/m ³ Zr	TWA: 5 mg/m ³ Zr (vacated) TWA: 5 mg/m ³ Zr (vacated) STEL: 10 mg/m ³ Zr	IDLH: 25 mg/m ³ Zr TWA: 5 mg/m ³ except Zirconium tetrachloride Zr STEL: 10 mg/m ³ Zr
Boron oxide 1303-86-2	TWA: 10 mg/m ³	TWA: 15 mg/m ³ total dust (vacated) TWA: 10 mg/m ³ total dust	IDLH: 2000 mg/m ³ TWA: 10 mg/m ³
Aluminum oxide 1344-28-1	TWA: 1 mg/m ³ respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction	-

Molybdenum 7439-98-7	TWA: 10 mg/m ³ inhalable fraction TWA: 3 mg/m ³ respirable fraction	(vacated) TWA: 10 mg/m ³	IDLH: 5000 mg/m ³
Zirconium 7440-67-7	STEL: 10 mg/m ³ TWA: 5 mg/m ³	TWA: 5 mg/m ³ Zr (vacated) TWA: 5 mg/m ³ (vacated) STEL: 10 mg/m ³	IDLH: 50 mg/m ³ TWA: 5 mg/m ³ STEL: 10 mg/m ³

Appropriate engineering controls**Engineering Measures**

Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment**Eye/Face Protection**

Always wear approved safety glasses with side shields when operating machinery.

Skin and Body Protection

Wear protective gloves

Respiratory Protection

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Solid (compressed).	Appearance	Metallic.
Odor	None.	Odor Threshold	No information available.

<u>Property</u>	<u>Values</u>	<u>Remarks/ - Method</u>
pH	Not applicable	None known
Melting Point/Range	Not applicable	None known
Boiling Point/Boiling Range	Not applicable	None known
Flash Point	Not applicable.	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	No data available	None known
Specific Gravity	Not applicable	None known
Water Solubility	Insoluble in water.	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known

Flammable Properties

Not flammable

Explosive Properties

No data available

Oxidizing Properties

No data available

Other information

VOC Content (%)	No data available
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10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Hazardous Polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information****Inhalation**

Product does not present an acute toxicity hazard based on known or supplied information. May cause allergy or asthma symptoms or breathing difficulties if inhaled. Inhalation of dust in high concentration may cause irritation of respiratory system.

Eye Contact

Dust contact with the eyes can lead to mechanical irritation.

Skin Contact

Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Ingestion

There is no data available for this product.

Component Information

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Cobalt	= 6170 mg/kg (Rat)	-	> 10 mg/L (Rat) 1 h
Nickel	> 9000 mg/kg (Rat)	-	-
Boron oxide	= 3150 mg/kg (Rat)	-	-
Aluminum oxide	> 5000 mg/kg (Rat)	-	-

Symptoms related to the physical, chemical and toxicological characteristics**Symptoms**

No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure**Sensitization**

No information available.

Mutagenic Effects

No information available.

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Tungsten carbide		Group 2A	Reasonably Anticipated	X
Cobalt	A3	Group 2B	Reasonably Anticipated	X
Nickel		Group 2B	Reasonably Anticipated	X
Chromium		Group 3		

ACGIH: (American Conference of Governmental Industrial Hygienists)

A3 - Animal Carcinogen

IARC: (International Agency for Research on Cancer)

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

Group 3 - Not Classifiable as to its Carcinogenicity to Humans

NTP: (National Toxicity Program)

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

Reproductive Toxicity

No information available.

STOT - single exposure

No information available.

STOT - repeated exposure

No information available.

Aspiration Hazard

No information available.

Numerical measures of toxicity - Product**Acute Toxicity** 0% of the mixture consists of ingredient(s) of unknown toxicity.*The following values are calculated based on chapter 3.1 of the GHS document:* Not applicable**12. ECOLOGICAL INFORMATION****Ecotoxicity**

Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Cobalt 7440-48-4	-	LC50 96 h: > 100 mg/L static (Brachydanio rerio)	-	-
Nickel 7440-02-0	EC50 72 h: = 0.18 mg/L (Pseudokirchneriella subcapitata) EC50 96 h: 0.174 - 0.311 mg/L static (Pseudokirchneriella subcapitata)	LC50 96 h: > 100 mg/L (Brachydanio rerio) LC50 96 h: = 1.3 mg/L semi-static (Cyprinus carpio) LC50 96 h: = 10.4 mg/L static (Cyprinus carpio)	-	EC50 48 h: > 100 mg/L (Daphnia magna) EC50 48 h: = 1 mg/L Static (Daphnia magna)
Boron oxide 1303-86-2		LC50 72 h: = 0.57 g/L flow-through (Carassius auratus)		EC50 48 h: 370 - 490 mg/L (Daphnia magna)
Aluminum oxide 1344-28-1		LC50 96 h: > 100 mg/L semistatic (Salmo trutta)		LC50 48 h: > 100 mg/L (daphnia magna)

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS**Waste Disposal Methods**

This material, as supplied, is not a hazardous waste according to state and federal regulations (40 CFR 261)

Contaminated Packaging

Do not re-use empty containers.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Nickel - 7440-02-0	(hazardous constituent - no waste number)	Included in waste streams: F006, F039		
Chromium - 7440-47-3		Included in waste streams: F032, F034, F035, F037, F038, F039	5.0 mg/L regulatory level	

14. TRANSPORT INFORMATION

<u>DOT</u>	Not regulated
<u>TDG</u>	Not regulated
<u>MEX</u>	Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL	Complies

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372:

Chemical Name	CAS-No	Weight %	SARA 313 - Threshold Values %
Cobalt	7440-48-4	30	0.1
Nickel	7440-02-0	20	0.1
Chromium	7440-47-3	5	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product contains the following substances which are regulated pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42):

Chemical Name	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Nickel		X	X	

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302):

Chemical Name	Hazardous Substances RQs	Extremely Hazardous Substances RQs	RQ
Nickel	100 lb		RQ 100 lb final RQ RQ 45.4 kg final RQ
Chromium			RQ 5000 lb final RQ RQ 2270 kg final RQ

U.S. State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS-No	California Prop. 65
Cobalt	7440-48-4	Carcinogen
Nickel	7440-02-0	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Tungsten carbide	X				
Cobalt	X	X	X	X	X
Nickel	X	X	X	X	X
Boron oxide	X	X	X		X
Aluminum oxide	X	X	X		X
Zirconium	X	X	X		X
Molybdenum	X	X	X		X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA	Health Hazard 0	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 2*	Flammability 0	Physical Hazard 0	Personal Protection X

**Indicates a chronic health hazard.*

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

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General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet

PRODUCT LABEL ON FOLLOWING SHEET



CARBIDE INSERTED MANDRELS, SHOES, TOOL INSERTS and TS SHOT

PRODUCT IDENTIFIER SDS-083

CONTAINS: <100% Tungsten carbide CAS 12070-12-1, <31% Molybdenum carbide CAS 12069-89-5, <31% Cobalt CAS 7440-48-4, <21% Nickel CAS 7440-02-0, <6% Zirconium carbide CAS 12070-14-3, <6% Chromium CAS 7440-47-3, <3% Zirconium CAS 7440-67-7, <3% Molybdenum CAS 7439-98-7, <3% Boron oxide CAS 1303-86-2, <3% Aluminum oxide CAS 1344-28-1.

PRECAUTIONARY STATEMENTS

PREVENTION: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. In case of inadequate ventilation wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product.

GENERAL ADVICE: If exposed or concerned: Get medical attention/advice. **SKIN: IF ON SKIN:** Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

INHALATION: IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

STORAGE: Store locked up.

DISPOSAL: Dispose of contents/container to an approved waste disposal plant.

HAZARD NOT OTHERWISE CLASSIFIED (HNOC): Not applicable.

OTHER INFORMATION: Very toxic to aquatic life with long lasting effects.

DANGER

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction. May cause cancer. Causes damage to organs through prolonged or repeated exposure. Appearance: Gray metallic Physical State: Solid Odor: None

FIRST AID

As a solid object the tool presents no hazard at normal temperatures. However when used in the normal manner or if modified for use by abrading, grinding, cutting or processing in another fashion that creates potentially hazardous dust or fumes can result in exposure by inhalation, swallowing or come in contact with skin or eyes. The information below is for these instances.

INHALATION: Remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.

SKIN CONTACT: Wash skin with soap and water. If skin irritation or rash occurs: Get medical advice/attention. Remove and wash contaminated clothing before re-use.

EYE CONTACT : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses if convenient to do so. Continue rinsing. If eye irritation persists: Get medical advice/attention.

INGESTION: Call a POISON CENTER or doctor/physician if exposed or you feel unwell.

IN CASE OF FIRE

Use water spray, dry chemical powder, carbon dioxide or alcohol resistant foam to extinguish. Do not breath fumes.

SUNNEN PRODUCTS
7910 MANCHESTER ROAD
ST. LOUIS, MO 63143 U.S.A.
314-781-2105

LAB-083-US(en)-CARBIDE INSERTED MANDRELS SHOES INSERTS