

Issuing Date 20-Oct-2014

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Revision Number 3

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

### GHS product identifier

**Product Name** GUIDE SHOE, MANDREL, TRUING SLEEVE, ALIGNMENT BUSHING and TS Shot

### Other means of identification

**Part Number** Exm. K6-185CS, C-187, S-185, VB-C or WG-GH

**Synonyms** PRODUCT CODE 001

### Recommended use of the chemical and restrictions on use

**Recommended Use** Tooling used in the honing process

**Uses advised against** No information available

### Supplier's details

#### **Supplier Address**

Sunnen Products  
7910 Manchester  
Saint Louis, MO 63143  
314-781-2100  
Website: www.sunnen.com

**Emergency telephone number** 1 (314) 781-2100 8 a. m. - 3 p.m. C.S.T (US)  
Email: SDS@sunnen.com

## 2. HAZARDS IDENTIFICATION

### Classification

Downstream use of this product, results in hazardous elements being emitted under certain processing conditions such as but not limited to: abrading, cutting, welding, sanding, burning, milling or grinding. The classifications 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

<b>Signal Word</b>	<b>Danger</b>
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**Hazard Statements**

May cause allergic reactions upon breathing of dusts  
 May cause allergic skin reactions  
 May cause eye irritation  
 Causes damage to aquatic life upon repeated exposure



**Appearance** Various shades, Black,  
Silver, Brass

**Physical State** Solid.

**Odor** No information available

**Precautionary Statements****Prevention**

- Obtain special instructions before use.
- Do not handle until all safety precautions have been read and understood.
- In case of inadequate ventilation wear respiratory protection.
- Contaminated work clothing should not be allowed out of the workplace.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- Wash face, hands and any exposed skin thoroughly after handling.
- Wear protective gloves/protective clothing/eye protection/face protection.
- 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 Very toxic to aquatic life with long lasting effects

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Synonyms**

PRODUCT IDENTIFIER SDS-001

Chemical Name	CAS-No	Weight %	Trade secret
Iron	7439-89-6	0-100	*
Zinc	7440-66-6	0-96	*

Copper (metallic)	7440-50-8	0-85	*
Aluminum	7429-90-5	0-12	*
Nickel	7440-02-0	0-3	*
Manganese	7439-96-5	0-2	*
Chromium	7440-47-3	0-2	*
Cobalt	7440-48-4	<1.5	*
Vanadium	7440-62-2	0-1	*
Sulfur	7704-34-9	0-1	*
Silicon	7440-21-3	0-1	*
Phosphorous acid	13598-36-2	0-1	*
Molybdenum	7439-98-7	0-1	*

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

#### 4. FIRST AID MEASURES

##### Description of necessary first-aid measures

<b>General Advice</b>	If exposed or concerned: Get medical attention/advice
<b>Eye Contact</b>	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.
<b>Skin Contact</b>	Wash skin with soap and water. If skin irritation or rash occurs: Get medical advice/attention. Contaminated clothing presents a fire hazard and should be removed immediately.
<b>Inhalation</b>	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.
<b>Ingestion</b>	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. 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**

Downstream use of this product, results in hazardous elements being emitted under certain processing conditions such as but not limited to: abrading, cutting, welding, sanding, burning, milling or grinding. In these case, the following precautions should be taken. Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling.

**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**

If exposed to 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 local 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
Copper (metallic) 7440-50-8	TWA: 0.2 mg/m <sup>3</sup> fume	TWA: 0.1 mg/m <sup>3</sup> fume TWA: 1 mg/m <sup>3</sup> dust and mist (vacated) TWA: 0.1 mg/m <sup>3</sup> Cu dust, fume, mist	IDLH: 100 mg/m <sup>3</sup> dust, fume and mist TWA: 1 mg/m <sup>3</sup> dust and mist TWA: 0.1 mg/m <sup>3</sup> fume
Aluminum 7429-90-5	TWA: 1 mg/m <sup>3</sup> respirable fraction	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 15 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	TWA: 10 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable dust
Nickel 7440-02-0	TWA: 1.5 mg/m <sup>3</sup>	TWA: 1 mg/m <sup>3</sup> (vacated) TWA: 1 mg/m <sup>3</sup>	IDLH: 10 mg/m <sup>3</sup> TWA: 0.015 mg/m <sup>3</sup>
Manganese 7439-96-5	TWA: 0.2 mg/m <sup>3</sup>	(vacated) TWA: 1 mg/m <sup>3</sup> fume (vacated) STEL: 3 mg/m <sup>3</sup> fume (vacated) Ceiling: 5 mg/m <sup>3</sup> Ceiling: 5 mg/m <sup>3</sup> fume	IDLH: 500 mg/m <sup>3</sup> TWA: 1 mg/m <sup>3</sup> fume STEL: 3 mg/m <sup>3</sup>
Cobalt 7440-48-4	TWA: 0.02 mg/m <sup>3</sup>	TWA: 0.1 mg/m <sup>3</sup> dust and fume (vacated) TWA: 0.05 mg/m <sup>3</sup> dust and fume	IDLH: 20 mg/m <sup>3</sup> dust and fume TWA: 0.05 mg/m <sup>3</sup> dust and fume

Silicon 7440-21-3	-	TWA: 15 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable fraction (vacated) TWA: 10 mg/m <sup>3</sup> total dust (vacated) TWA: 5 mg/m <sup>3</sup> respirable fraction	TWA: 10 mg/m <sup>3</sup> total dust TWA: 5 mg/m <sup>3</sup> respirable dust
Molybdenum 7439-98-7	TWA: 10 mg/m <sup>3</sup> inhalable fraction TWA: 3 mg/m <sup>3</sup> respirable fraction	(vacated) TWA: 10 mg/m <sup>3</sup>	IDLH: 5000 mg/m <sup>3</sup>
Vanadium 7440-62-2	-	(vacated) TWA: 0.05 mg/m <sup>3</sup> V2O5 respirable dust (vacated) TWA: 0.05 mg/m <sup>3</sup> V2O5 fume Ceiling: 0.5 mg/m <sup>3</sup> V2O5 respirable dust Ceiling: 0.1 mg/m <sup>3</sup> V2O5 fume	Ceiling: 0.05 mg/m <sup>3</sup> V dust and fume 15 min TWA: 1 mg/m <sup>3</sup> STEL: 3 mg/m <sup>3</sup> Ferrovandium dust

**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/clothing.

**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**

<b>Physical State</b>	Solid	<b>Appearance</b>	Various shades Black Silver Brass
<b>Odor</b>	No information available	<b>Odor Threshold</b>	No information available
<b>Property</b>	<b>Values</b>	<b>Remarks/ - Method</b>	
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		None known	
Water Solubility	Not applicable	None known	
Solubility in other solvents	Not applicable	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	Not applicable	None known	
<b>Flammable Properties</b>	Not flammable		
<b>Explosive Properties</b>	No data available		
<b>Oxidizing Properties</b>	No data available		

**Other information**

VOC Content (%) No data available

**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**

Dust formation.

**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**

Not an expected route of exposure.

**Component Information**

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Carbon	10000 mg/kg ( Rat )	-	-
Sulfur	> 3000 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 9.23 mg/L ( Rat ) 4 h

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

Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain, or flushing

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

May cause sensitization by inhalation. May cause sensitization by skin contact.

**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
Nickel		Group 2B	Reasonably Anticipated	X
Chromium		Group 3		
Cobalt	A3	Group 2B	Reasonably Anticipated	X

**ACGIH: (American Conference of Governmental Industrial Hygienists)**

A3 - Animal Carcinogen

**IARC: (International Agency for Research on Cancer)**

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**

Causes damage to organs through prolonged or repeated exposure if inhaled

**Aspiration Hazard**

No information available.

**Numerical measures of toxicity - Product**

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)
Iron 7439-89-6	-	LC50 96 h: = 0.56 mg/L semi-static (Cyprinus carpio) LC50 96 h: = 13.6 mg/L static (Morone saxatilis)	-	-
Zinc 7440-66-6	EC50 72 h: 0.09 - 0.125 mg/L static (Pseudokirchneriella subcapitata) EC50 96 h: 0.11 - 0.271 mg/L static (Pseudokirchneriella subcapitata)	LC50 96 h: 0.211-0.269 mg/L semi-static (Pimephales promelas) LC50 96 h: 2.16-3.05 mg/L flow-through (Pimephales promelas) LC50 96 h: = 0.24 mg/L flow-through (Oncorhynchus mykiss) LC50 96 h: = 0.41 mg/L static (Oncorhynchus mykiss) LC50 96 h: = 0.45 mg/L semi-static (Cyprinus carpio) LC50 96 h: = 0.59 mg/L semi-static (Oncorhynchus mykiss) LC50 96 h: = 2.66 mg/L static (Pimephales promelas) LC50 96 h: = 3.5 mg/L static (Lepomis macrochirus) LC50 96 h: = 30 mg/L (Cyprinus carpio) LC50 96 h: = 7.8 mg/L static (Cyprinus carpio)		EC50 48 h: 0.139 - 0.908 mg/L Static (Daphnia magna)

Copper (metallic) 7440-50-8	EC50 96 h: 0.031 - 0.054 mg/L static (Pseudokirchneriella subcapitata) EC50 72 h: 0.0426 - 0.0535 mg/L static (Pseudokirchneriella subcapitata)	LC50 96 h: 0.0068 - 0.0156 mg/L (Pimephales promelas) LC50 96 h: < 0.3 mg/L static (Pimephales promelas) LC50 96 h: = 0.052 mg/L flow-through (Oncorhynchus mykiss) LC50 96 h: = 0.112 mg/L flow-through (Poecilia reticulata) LC50 96 h: = 0.2 mg/L flow-through (Pimephales promelas) LC50 96 h: = 0.3 mg/L semi-static (Cyprinus carpio) LC50 96 h: = 0.8 mg/L static (Cyprinus carpio) LC50 96 h: = 1.25 mg/L static (Lepomis macrochirus)		EC50 48 h: = 0.03 mg/L Static (Daphnia magna)
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)
Cobalt 7440-48-4	-	LC50 96 h: > 100 mg/L static (Brachydanio rerio)	-	-
Phosphorous acid 13598-36-2		LC50 96 h: 6980 - 9784 mg/L static (Brachydanio rerio)		
Sulfur 7704-34-9	-	LC50: 866 mg/L Brachydanio rerio 96 h static LC50: <14 mg/L Lepomis macrochirus 96 h static LC50: >180 mg/L Oncorhynchus mykiss 96 h static	-	-

**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 Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

#### 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	
Vanadium - 7440-62-2		Included in waste stream: F039		

### 14. TRANSPORT INFORMATION



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

## 15. REGULATORY INFORMATION

### International Inventories

<b>TSCA</b>	Complies
<b>DSL</b>	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 does not contain any 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 %
Zinc	7440-66-6	96	1.0
Copper	7440-50-8	85	1.0
Aluminum	7429-90-5	12	1.0
Nickel	7440-02-0	3	0.1
Chromium	7440-47-3	2	1.0
Cobalt	7440-48-4	1.5	0.1
Vanadium	7440-62-2	1	1.0

### SARA 311/312 Hazard Categories

<b>Acute Health Hazard</b>	Yes
<b>Chronic Health Hazard</b>	Yes
<b>Fire Hazard</b>	No
<b>Sudden Release of Pressure Hazard</b>	No
<b>Reactive Hazard</b>	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
Zinc		X	X	
Copper (metallic)		X	X	
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
Zinc	1000 lb		RQ 454 kg final RQ RQ 1000 lb final RQ
Copper (metallic)	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final 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
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**U.S. State Regulations****California Proposition 65**

This product contains the following Proposition 65 chemicals:

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

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania	Illinois	Rhode Island
Zinc	X	X	X		X
Copper	X	X	X	X	X
Aluminum	X	X	X		X
Nickel	X	X	X	X	X
Cobalt	X	X	X	X	X
Silicon	X	X	X		X
Vanadium	X	X	X		
Phosphorous acid	X				
Molybdenum	X	X	X		X

**U.S. EPA Label Information**

**EPA Pesticide Registration Number** Not applicable

**16. OTHER INFORMATION**

<b><u>NFPA</u></b>	<b>Health Hazard</b> 0	<b>Flammability</b> 0	<b>Instability</b> 0	<b>Physical and Chemical Hazards -</b>
<b><u>HMIS</u></b>	<b>Health Hazard</b> 2*	<b>Flammability</b> 0	<b>Physical Hazard</b> 0	<b>Personal Protection</b> X

*\*Indicates a chronic health hazard.*

**Prepared By** Sunnen Products Company  
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1-314-781-2100

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**Revision Date** 30-Jun-2020  
**Revision Note** Review

**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 page.