

## Safety Data Sheet

according to 1907/2006/EC (REACH), 1272/2008/EC (CLP), and OSHA GHS

Revision: 27 June 2019

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

- **1.1 Product identifier**
- **Trade name:** **SG 513**
- **Other means of identification:** Iron Tungsten Carbide cored wire
- **1.2 Relevant identified uses of the substance or mixture and uses advised against**
- **Application of the substance / the mixture:**
  - Thermal spray wire
  - Boiler tubes
  - Fan blades
  - High wear applications
- **Uses advised against:** No further relevant information available.
- **1.3 Details of the supplier of the Safety Data Sheet**
- **Manufacturer/Supplier:**
  - Saint-Gobain
  - One New Bond Street
  - Worcester, MA 01615-0137
  - USA
  - 508-795-5000
  - Ceramicmaterials@saint-gobain.com
- **1.4 Emergency telephone number:**
  - ChemTel Inc.
  - (800)255-3924 (North America)
  - +1 (813)248-0585 (International)
  - 1-300-954-583 (Australia)
  - 0-800-591-6042 (Brazil)
  - 400-120-0751 (China)
  - 000-800-100-4086 (India)
  - 01-800-099-0731 (Mexico)

### SECTION 2: Hazards identification

- **2.1 Classification of the substance or mixture**
- **Classification according to Regulation (EC) No 1272/2008**

Classifications listed are applicable to the OSHA GHS Hazard Communication Standard (29CFR1910.1200).

Skin Sens. 1 H317 May cause an allergic skin reaction.
- **2.2 Label elements**
- **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the Globally Harmonized System within the United States.

The product is classified and labelled according to the CLP regulation.
- **Hazard pictograms**

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GHS07

- **Signal word** Warning
- **Hazard-determining components of labelling:**  
Nickel
- **Hazard statements**  
H317 May cause an allergic skin reaction.
- **Precautionary statements**  
P261 Avoid breathing fume.  
P272 Contaminated work clothing should not be allowed out of the workplace.  
P280 Wear protective gloves.  
P302+P352 IF ON SKIN: Wash with plenty of soap and water.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P362+P364 Take off contaminated clothing and wash it before reuse.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

### 2.3 Other hazards

Heat rays (infrared radiation) from flame or hot metal can injure eyes. Overexposure to metal fumes and gases can be hazardous. Read and understand the manufacturer's instructions, Safety Data Sheet and the precautionary labels before using this product.

### Results of PBT and vPvB assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

#### Components:

CAS: 7439-89-6 EINECS: 231-096-4 Reg.nr.: 01-2119462838-24-XXXX	Iron substance with a Community workplace exposure limit	30-65%
CAS: 12070-12-1 EINECS: 235-123-0 Reg.nr.: 01-2119486687-17-XXXX	Tungsten carbide substance with a Community workplace exposure limit	22,5-27,5%
CAS: 7440-47-3 EINECS: 231-157-5 Reg.nr.: 01-2119485652-31-XXXX	Chromium substance with a Community workplace exposure limit	10-15%
CAS: 7440-02-0 EINECS: 231-111-4 Index number: 028-002-00-7 Reg.nr.: 01-2119438727-29-XXXX	Nickel ⚠ Skin Sens. 1, H317	2,5-7,5%
CAS: 12070-08-5 EINECS: 235-120-4 Reg.nr.: 01-2119958954-19-XXXX	Titanium carbide	2,5-7,5%

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CAS: 7440-42-8 EINECS: 231-151-2 Reg.nr.: 01-2119978866-12-XXXX	boron	0,1-5%
CAS: 7439-96-5 EINECS: 231-105-1 Reg.nr.: 01-2119449803-34-XXXX	Manganese substance with a Community workplace exposure limit	0,1-5%
CAS: 7440-21-3 EINECS: 231-130-8 Reg.nr.: 01-2119480401-47-XXXX	Silicon substance with a Community workplace exposure limit	0,1-5%

· **Additional information:** For the wording of the listed Hazard Statements refer to section 16.

## SECTION 4: First aid measures

### · 4.1 Description of first aid measures

#### · **After inhalation:**

Supply fresh air; consult doctor in case of complaints.  
Provide oxygen treatment if affected person has difficulty breathing.

#### · **After skin contact:**

In case of minor burns, flush with cool water.  
Remove contaminated clothing and wash the skin thoroughly with soap and water. For reddened or blistered skin, or thermal burns, obtain medical assistance at once.

#### · **After eye contact:**

Remove contact lenses if worn, if possible.  
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

#### · **After swallowing:**

Unlikely route of exposure.  
Rinse out mouth and then drink plenty of water.  
Do not induce vomiting; call for medical help immediately.

### · 4.2 Most important symptoms and effects, both acute and delayed

Thermal burns.  
Allergic reactions  
Short-term (acute) overexposure to metal fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Long-term (chronic) overexposure to metal fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects. Refer to Section 11 for more information.

### · 4.3 Indication of any immediate medical attention and special treatment needed

Contains Nickel. May produce an allergic reaction.

## SECTION 5: Firefighting measures

### · 5.1 Extinguishing media

- **Suitable extinguishing agents:** For metal fires: Use specific agents only.
- **For safety reasons unsuitable extinguishing agents:** For metal fires: Use specific agents only.

### · 5.2 Special hazards arising from the substance or mixture

Formation of toxic gases is possible during heating or in case of fire.

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Welding arc and sparks can ignite combustibles and flammable products.

· **5.3 Advice for firefighters**

· **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

## SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation

Avoid formation of dust.

Do not breathe dust.

· **6.2 Environmental precautions** Avoid release to the environment.

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

Sweep up and place into an appropriate container.

Dispose of the material collected according to regulations.

Send for recovery or disposal in suitable receptacles.

· **6.4 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.

## SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**

Use only in well ventilated areas.

Prevent formation of dust.

· **7.2 Conditions for safe storage, including any incompatibilities**

· **Requirements to be met by storerooms and receptacles:**

Storage area should be dry and well-ventilated.

· **Information about storage in one common storage facility:** Store away from foodstuffs.

· **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**

· **Ingredients with limit values that require monitoring at the workplace:**

**7439-89-6 Iron**

EV (Canada)

Long-term value: 1\* 5\*\* mg/m<sup>3</sup>  
as iron;\*salts, water-soluble;\*\*welding fume

**12070-12-1 Tungsten carbide**

EL (Canada)

Short-term value: 10 mg/m<sup>3</sup>  
Long-term value: 5 mg/m<sup>3</sup>  
as W

WEL (Great Britain)

Short-term value: 10 mg/m<sup>3</sup>

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OEL (Ireland)	Long-term value: 5 mg/m <sup>3</sup> as W
REL (USA)	Short-term value: 10 mg/m <sup>3</sup> Long-term value: 5 mg/m <sup>3</sup> as W
TLV (USA)	Long-term value: 3* mg/m <sup>3</sup> as W; * respirable fraction

## 7440-47-3 Chromium

IOELV (EU)	Long-term value: 2 mg/m <sup>3</sup> as Cr
EL (Canada)	Long-term value: 0,5 mg/m <sup>3</sup> as metal
EV (Canada)	Long-term value: 0,05 mg/m <sup>3</sup>
WEL (Great Britain)	Long-term value: 0,5 mg/m <sup>3</sup>
OEL (Ireland)	Long-term value: 2 mg/m <sup>3</sup> IOELV
PEL (USA)	Long-term value: 1 mg/m <sup>3</sup>
REL (USA)	Long-term value: 0,5* mg/m <sup>3</sup> *metal+inorg.compds.as Cr; See Pocket Guide App. C
TLV (USA)	Long-term value: 0,003* 0,5** mg/m <sup>3</sup> inh. fraction, *as Cr(III), **metal

## 7440-02-0 Nickel

EL (Canada)	Long-term value: 0,05 mg/m <sup>3</sup> ACGIH A1, IARC 2B
EV (Canada)	Long-term value: 1 mg/m <sup>3</sup> Inhalable fraction
WEL (Great Britain)	Long-term value: 0,5 mg/m <sup>3</sup> as Ni; Sk; Carc
OEL (Ireland)	Long-term value: 0,5 mg/m <sup>3</sup> Sens
PEL (USA)	Long-term value: 1 mg/m <sup>3</sup>
REL (USA)	Long-term value: 0,015 mg/m <sup>3</sup> as Ni; See Pocket Guide App. A
TLV (USA)	Long-term value: 1,5* mg/m <sup>3</sup> elemental, *inhalable fraction

## 7439-96-5 Manganese

IOELV (EU)	Long-term value: 0,2* 0,05** mg/m <sup>3</sup> as Mn; *inhalable, **respirable fraction
EL (Canada)	Long-term value: 0,2; 0,02* mg/m <sup>3</sup> as Mn; R, *respirable
EV (Canada)	Long-term value: 0,2 mg/m <sup>3</sup> as manganese

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WEL (Great Britain)	Long-term value: 0,2* 0,05** mg/m <sup>3</sup> as Mn *inhalable fraction **respirable fraction
OEL (Ireland)	Long-term value: 0,2* 0,05** mg/m <sup>3</sup> as Mn; IOELV; *inhalable **respirable
PEL (USA)	Ceiling limit: 5 mg/m <sup>3</sup> as Mn
REL (USA)	Short-term value: 3 mg/m <sup>3</sup> Long-term value: 1 mg/m <sup>3</sup> fume, as Mn
TLV (USA)	Long-term value: 0,02* 0,1** mg/m <sup>3</sup> as Mn; *respirable **inhalable fraction

## 7440-21-3 Silicon

EL (Canada)	Long-term value: 10* 3** mg/m <sup>3</sup> *total dust;**respirable fraction
EV (Canada)	Long-term value: 10 mg/m <sup>3</sup> total dust
WEL (Great Britain)	Long-term value: 10* 4** mg/m <sup>3</sup> *inhalable dust **respirable dust
OEL (Ireland)	Long-term value: 10* 4** mg/m <sup>3</sup> *total inhalable **respirable dust
PEL (USA)	Long-term value: 15* 5** mg/m <sup>3</sup> *total dust **respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m <sup>3</sup> *total dust **respirable fraction
TLV (USA)	TLV withdrawn

- **DNELs:** No further relevant information available.
- **PNECs:** No further relevant information available.

### 8.2 Exposure controls

- **Engineering measures** Provide adequate ventilation.

#### · **General protective and hygienic measures:**

The usual precautionary measures are to be adhered to when handling chemicals.

Keep away from foodstuffs, beverages and feed.

Avoid breathing dust.

Avoid breathing vapours.

#### · **Respiratory protection:**

Use respiratory protection when grinding or cutting material.

Keep your head out of fumes. Use enough ventilation and local exhaust to keep fumes and gases from your breathing zone and the general area. An approved respirator should be used unless exposure assessments are below applicable exposure limits.

#### · **Protection of hands:**



Thermally-protective gloves.

#### · **Eye protection:**

Follow relevant national guidelines concerning the use of protective eyewear.

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Wear glasses or face shield with appropriate shading.

- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:**  
No further relevant information available.
- **Risk management measures:** No further relevant information available.

## SECTION 9: Physical and chemical properties

### · 9.1 Information on basic physical and chemical properties

#### · Appearance

- |                           |                 |
|---------------------------|-----------------|
| · <b>Form:</b>            | Solid           |
| · <b>Colour:</b>          | Silver-grey.    |
| · <b>Odour:</b>           | Odourless       |
| · <b>Odour threshold:</b> | Not determined. |

- |   |                     |
|---|---------------------|
| · <b>pH-value:</b>                                | Not applicable.     |
| · <b>Melting point/freezing point:</b>            | ~1400 °C (~2552 °F) |
| · <b>Initial boiling point and boiling range:</b> | Not determined.     |

- |                       |                 |
|-----------------------|-----------------|
| · <b>Flash point:</b> | Not applicable. |
|-----------------------|-----------------|

- |                                     |                 |
|-------------------------------------|-----------------|
| · <b>Flammability (solid, gas):</b> | Not determined. |
|-------------------------------------|-----------------|

- |  |                 |
|--|-----------------|
| · <b>Auto/Self-ignition temperature:</b> | Not determined. |
|--|-----------------|

- |                                     |                 |
|-------------------------------------|-----------------|
| · <b>Decomposition temperature:</b> | Not determined. |
|-------------------------------------|-----------------|

- |                                |   |
|--------------------------------|---|
| · <b>Explosive properties:</b> | Product does not present an explosion hazard. |
|--------------------------------|---|

#### · Explosion limits

- |                 |                 |
|-----------------|-----------------|
| · <b>Lower:</b> | Not determined. |
| · <b>Upper:</b> | Not determined. |

- |                               |                |
|-------------------------------|----------------|
| · <b>Oxidising properties</b> | Non-oxidising. |
|-------------------------------|----------------|

- |                           |                 |
|---------------------------|-----------------|
| · <b>Vapour pressure:</b> | Not determined. |
|---------------------------|-----------------|

#### · Density:

- |                            |                 |
|----------------------------|-----------------|
| · <b>Relative density:</b> | ~2              |
| · <b>Vapour density:</b>   | Not applicable. |
| · <b>Evaporation rate:</b> | Not applicable. |

- |  |            |
|--|------------|
| · <b>Solubility in / Miscibility with water:</b> | Insoluble. |
|--|------------|

- |  |                 |
|--|-----------------|
| · <b>Partition coefficient: n-octanol/water:</b> | Not determined. |
|--|-----------------|

#### · Viscosity

- |                     |                 |
|---------------------|-----------------|
| · <b>Dynamic:</b>   | Not applicable. |
| · <b>Kinematic:</b> | Not applicable. |

- |                                |  |
|--------------------------------|--|
| · <b>9.2 Other information</b> | No further relevant information available. |
|--------------------------------|--|

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## SECTION 10: Stability and reactivity

- **10.1 Reactivity** Reacts with strong acids.
- **10.2 Chemical stability**
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **10.3 Possibility of hazardous reactions** Reacts with strong acids.
- **10.4 Conditions to avoid** Prevent formation of dust.
- **10.5 Incompatible materials** Strong acids.
- **10.6 Hazardous decomposition products** Metal oxide smoke.

## SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values relevant for classification:** None.
- **Primary irritant effect**
- **Skin corrosion/irritation:**  
Based on available data, the classification criteria are not met.  
Heat rays can burn skin.
- **Serious eye damage/irritation:**  
Based on available data, the classification criteria are not met.  
Heat rays (infrared radiation) from flame or hot metal can injure eyes.
- **Respiratory or skin sensitisation:**  
May cause an allergic skin reaction.
- **Subacute to chronic toxicity:**  
Short-term (acute) overexposure to metal fumes may result in discomfort such as metal fume fever, dizziness, nausea, or dryness or irritation of nose, throat, or eyes. May aggravate pre-existing respiratory problems (e.g. asthma, emphysema).

Long-term (chronic) overexposure to metal fumes can lead to siderosis (iron deposits in lung), central nervous system effects, bronchitis and other pulmonary effects.

- **Carcinogenic categories**

### · IARC (International Agency for Research on Cancer):

7440-02-0	Nickel	2B
12070-12-1	Tungsten carbide	2A

- **Probable routes of exposure:**  
Inhalation.  
Eye contact.  
Skin contact.
- **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.
- **Carcinogenicity:** Based on available data, the classification criteria are not met.
- **Reproductive toxicity:** Based on available data, the classification criteria are not met.
- **STOT-single exposure:** Based on available data, the classification criteria are not met.
- **STOT-repeated exposure:** Based on available data, the classification criteria are not met.
- **Aspiration hazard:** Based on available data, the classification criteria are not met.

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## SECTION 12: Ecological information

- **12.1 Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **12.2 Persistence and degradability**  
Inorganic product, is not eliminable from water by means of biological cleaning processes.
- **12.3 Bioaccumulative potential** No further relevant information available.
- **12.4 Mobility in soil** No further relevant information available.
- **12.5 Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

- **13.1 Waste treatment methods**
- **Recommendation**  
Contact waste processors for recycling information.  
The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

- |  |                 |
|--|-----------------|
| · <b>14.1 UN-Number</b>  |                 |
| · DOT, ADR/RID/ADN, IMDG, IATA   | Not Regulated   |
| · <b>14.2 UN proper shipping name</b>  |                 |
| · DOT, ADR/RID/ADN, IMDG, IATA   | Not Regulated   |
| · <b>14.3 Transport hazard class(es)</b>   |                 |
| · DOT, ADR/RID/ADN, IMDG, IATA   |                 |
| · Class  | Not Regulated   |
| · Label  | -               |
| · <b>14.4 Packing group</b>  |                 |
| · DOT, ADR/RID/ADN, IMDG, IATA   | Not Regulated   |
| · <b>14.5 Environmental hazards:</b>   |                 |
| · Marine pollutant:  | No              |
| · <b>14.6 Special precautions for user</b>                                       | Not applicable. |
| · <b>14.7 Transport in bulk according to Annex II of Marpol and the IBC Code</b> | Not applicable. |

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## SECTION 15: Regulatory information

### · 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- United States (USA)
- SARA

#### · Section 302 (extremely hazardous substances):

None of the ingredients are listed.

#### · Section 355 (extremely hazardous substances):

None of the ingredients are listed.

#### · Section 313 (Specific toxic chemical listings):

7440-47-3	Chromium
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7440-02-0	Nickel
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7439-96-5	Manganese
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#### · TSCA (Toxic Substances Control Act):

All ingredients are listed or exempt.

#### · Proposition 65 (California):

##### · Chemicals known to cause cancer:

7440-02-0	Nickel
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##### · Chemicals known to cause developmental toxicity for females:

None of the ingredients are listed.

##### · Chemicals known to cause developmental toxicity for males:

None of the ingredients are listed.

##### · Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

#### · EPA (Environmental Protection Agency)

7440-47-3	Chromium	D
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7440-42-8	boron	I (oral)
-----------	-------	----------

7439-96-5	Manganese	D
-----------	-----------	---

#### · IARC (International Agency for Research on Cancer)

12070-12-1	Tungsten carbide	2A
------------	------------------	----

7440-02-0	Nickel	2B
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#### · Canadian Domestic Substances List (DSL)

All ingredients are listed or exempt.

#### · Other regulations, limitations and prohibitive regulations

##### · Substances of very high concern (SVHC) according to REACH, Article 57

None of the ingredients are listed.

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

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## SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

### · Relevant phrases

H317 May cause an allergic skin reaction.

### · Abbreviations and acronyms:

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

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)

DNEL: Derived No-Effect Level (REACH)

PNEC: Predicted No-Effect Concentration (REACH)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

PBT: Persistent, Bio-accumulable, Toxic

SVHC: Substances of Very High Concern

vPvB: very Persistent and very Bioaccumulative

Skin Sens. 1: Skin sensitisation – Category 1

### · Sources

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

SDS Prepared by:

ChemTel Inc.

1305 North Florida Avenue

Tampa, Florida USA 33602-2902

Toll Free North America 1-888-255-3924 Intl. +01 813-248-0573

Website: [www.chemtelinc.com](http://www.chemtelinc.com)