Safety Data Sheet
Carbon & Alloy Steel

SECTION 1: Identification

1.1 Product identifier

Product name: Carbon & Alloy Steel

1.2 Other means of identification

Not available

1.3 Recommended use of the chemical and restrictions on use

Carbon & Alloy Steel Raw Materials & Components

1.4 Supplier’s details

Name: Reliable Source, Inc.
Address: 11109 Jasmine St
Fontana, CA 92337
USA
Telephone: 909-357-1211
Fax: 909-357-1311
email: info@rsmetals.us

1.5 Emergency phone number(s)

909-357-1211 (business hours)

SECTION 2: Hazard identification

General hazard statement

The product as delivered does not present a health hazard. However, if user activities generate dust, fumes or mists during processing and handling (melting, welding, sawing, brazing, grinding and machining), it may become hazardous.

2.1 Classification of the substance or mixture

GHS classification in accordance with: (US) OSHA (29 CFR 1910.1200)

- Carcinogenicity, Cat. 2
- Sensitization, respiratory, Cat. 1
- Sensitization, skin, Cat. 1
- Specific target organ toxicity (repeated exposure), Cat. 1
- Toxic to reproduction, Cat. 1A
- Toxic to reproduction, effects on or via lactation

2.2 GHS label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H317 May cause an allergic skin reaction
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
H351 Suspected of causing cancer
H360 May damage fertility or the unborn child
H362 May cause harm to breast-fed children
H372 Causes damage to organs through prolonged or repeated exposure

Precautionary statement(s)
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.
P263 Avoid contact during pregnancy/while nursing.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
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.
P301+P312 IF SWALLOWED: Call a POISON CENTER /doctor if you feel unwell
P302+P352 IF ON SKIN: Wash with plenty of water
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P314 Get medical advice/attention if you feel unwell.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P342+P311 If experiencing respiratory symptoms: Call a POISON CENTER/doctor
P363 Wash contaminated clothing before reuse.

2.3 Other hazards which do not result in classification
No data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Not applicable.

3.2 Mixtures

Components

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iron (CAS no.: 7439-89-6)</td>
<td>75 - 100 % (weight)</td>
</tr>
<tr>
<td>Tungsten (CAS no.: 7440-33-7)</td>
<td>5 - 10 % (weight)</td>
</tr>
<tr>
<td>Chromium compounds (as Cr (III)) (CAS no.: 7440-47-3)</td>
<td>5 - 10 % (weight)</td>
</tr>
</tbody>
</table>
CLASSIFICATIONS: Sensitization, skin, Cat. 1; Sensitization, respiratory, Cat. 1; Serious eye damage/eye irritation, Cat. 2; Hazardous to the aquatic environment, long-term (chronic), Cat. 4.

NICKEL (CAS no.: 7440-02-0; EC no.: 231-111-4) 5 - 10 % (weight)
CLASSIFICATIONS: Carcinogenicity, Cat. 2; Specific target organ toxicity (repeated exposure), Cat. 1; Sensitization, skin, Cat. 1; Hazardous to the aquatic environment, long-term (chronic), Cat. 3.

Zinc (CAS no.: 7440-66-6; EC no.: 231-175-3) 5 - 10 % (weight)
CLASSIFICATIONS: Hazardous to the aquatic environment, short-term (acute), Cat. 1; Hazardous to the aquatic environment, long-term (chronic), Cat. 1.

Silicon (CAS no.: 7440-21-3) 1 - 5 % (weight)
CLASSIFICATIONS: No data available.

Manganese (CAS no.: 7439-96-5) 1 - 5 % (weight)
CLASSIFICATIONS: No data available.

Carbon (CAS no.: 7440-44-0) 1 - 5 % (weight)
CLASSIFICATIONS: No data available.

LEAD (CAS no.: 7439-92-1; EC no.: 231-100-4) 0.1 - 1 % (weight)
CLASSIFICATIONS: Toxic to reproduction, Cat. 1A; Lact.

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact Take off immediately all contaminated clothing. Rinse skin with water/shower for at least 15 minutes. Call a poison center or doctor if irritation develops or persists. Wash contaminated clothing before reuse.

In case of eye contact Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention/advice.

If swallowed Rinse mouth. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a poison center or doctor.

4.2 Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labeling (see section 2) and/or in section 11

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

No data available.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

Combustion products may contain metal oxides.

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures
6.1 Personal precautions, protective equipment and emergency procedures
Avoid actions that cause dust to become airborne. Do not breathe dust or mist. Avoid contact with skin. Wear appropriate personal protective equipment as described in Section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid dust, mist or fume formation. Ensure adequate ventilation. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing. Avoid ingestion and inhalation. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Normal temperatures and pressures do not affect the material. Keep in a dry and well-ventilated place.

Specific end use(s)
Apart from the uses mentioned in section 1 no other specific uses are stipulated.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters
US OSHA Permissible Exposure Limits, Annotated Table Z-1, www.osha.gov:

<table>
<thead>
<tr>
<th></th>
<th>OSHA PEL (C) Ceiling</th>
<th>Cal/OSHA PEL 8-hour TWA (ST) STEL (C) Ceiling</th>
<th>NIOSH REL Up to 10-hour TWA (ST) STEL (C) Ceiling</th>
<th>ACGIH® TLV® 8-hour TWA (ST) STEL (C) Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chromium (III) compounds (CAS no.: 7440-47-3)</td>
<td>0.5 mg/m³</td>
<td>0.5 mg/m³</td>
<td>0.5 mg/m³</td>
<td>0.003 mg/m³ (IHL), water soluble</td>
</tr>
<tr>
<td>Chromium (VI) compounds</td>
<td>(C) 1 mg/10m³ Chromic acid and chromates</td>
<td>0.005 mg/m³ as Cr (C) 0.1 mg/m³</td>
<td>Ca 0.0002 mg/m³ (8-hr-TWA)</td>
<td>0.0002 mg/m³ (IHL) (ST) 0.0005 mg/m³ (IHL), water soluble</td>
</tr>
<tr>
<td>Lead inorganic (as Pb) (CAS no.: 7439-92-1) see 1910.1025</td>
<td>0.05 mg/m³</td>
<td>0.05 mg/m³</td>
<td>0.05 mg/m³</td>
<td></td>
</tr>
<tr>
<td>Silicon (CAS no.: 7440-21-3)</td>
<td>5 mg/m³</td>
<td>5 mg/m³</td>
<td>5 mg/m³</td>
<td></td>
</tr>
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</table>
### Nickel, metal and insoluble compounds (as Ni) (CAS no.: 7440-02-0)

<table>
<thead>
<tr>
<th>Element</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>1 mg/m³</td>
</tr>
<tr>
<td>Insoluble</td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limit Type</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ca</td>
<td>0.015 mg/m³</td>
</tr>
</tbody>
</table>

### Nickel, soluble compounds (as Ni) (CAS no.: 7440-02-0)

<table>
<thead>
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<th>Element</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>0.5 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limit Type</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ca</td>
<td>0.015 mg/m³</td>
</tr>
</tbody>
</table>

### Manganese compounds and fume (CAS no.: 7439-96-5)

<table>
<thead>
<tr>
<th>Element</th>
<th>Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal</td>
<td>1 mg/m³</td>
</tr>
<tr>
<td>Insoluble</td>
<td>0.1 mg/m³</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Limit Type</th>
<th>Limit Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ca</td>
<td>0.015 mg/m³</td>
</tr>
</tbody>
</table>

Abbreviations: C = Ceiling limit; Ca = Potential occupational carcinogens; CAS No. = Chemical Abstract Service Number; IHL = Inhalable; ppm = parts per million; STEL = Short Term Exposure Limit; Thor. = Thoracic fraction; TLV® = Threshold Limit Value; TWA – Time weighted average

### 8.2 Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.

### 8.3 Individual protection measures, such as personal protective equipment (PPE)

#### Pictograms

- Eye/face protection
- Skin protection
- Body protection
- Respiratory protection
- Thermal hazards

#### Eye/face protection
When engaged in activities where ingredients could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Wear face shield during welding or burning. Eye protection equipment must be tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU)

#### Skin protection
Wear protective gloves suitable for the material handled. Consult manufacturer specifications for further information.

#### Body protection
Wear protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

#### Respiratory protection
Avoid actions that cause dust exposure to occur. Use local or general ventilation to control exposures below applicable exposure limits. NIOSH or MSHA approved particulate filter respirators should be used in the context of respiratory protection program meeting the requirements of the OSHA respiratory protection standard [29 CFR 1910.134] to control exposures when ventilation or other controls are inadequate or discomfort or irritation is experienced. Respirator and/or filter cartridge selection should be based on American National Standards Institute (ANSI) Standards Z88.2 Practices for Respiratory Protection.

#### Thermal hazards
No data available.
Environmental exposure controls
Do not let product enter drains.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance/form (physical state, color, etc.)</td>
<td>Metal Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>No odor</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available.</td>
</tr>
<tr>
<td>pH</td>
<td>No data available.</td>
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<tr>
<td>Melting point/freezing point</td>
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</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available.</td>
</tr>
<tr>
<td>Upper/lower flammability limits</td>
<td>No data available.</td>
</tr>
<tr>
<td>Upper/lower explosive limits</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>No data available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available.</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>7.20 - 7.86</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Insoluble in water</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
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</tr>
<tr>
<td>Auto-ignition temperature</td>
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</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available.</td>
</tr>
<tr>
<td>Viscosity</td>
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<tr>
<td>Explosive properties</td>
<td>No data available.</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>No data available.</td>
</tr>
</tbody>
</table>

Other safety information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2 Chemical stability
Stable under normal storage conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids

10.6 Hazardous decomposition products
No data available.

SECTION 11: Toxicological information
Information on toxicological effects

Acute toxicity

Components:

IRON (CAS no.: 7439-89-6)
LD50 Oral - Rat
Result: 30000 mg/kg

Nickel (CAS no.: 7440-02-0):
LD50 Oral - Rat
Result: 9000 mg/kg

Manganese (CAS no.: 7439-96-5):
LD50 Oral - Rat
Result: 9000 mg/kg

Carbon (CAS no.: 7440-44-0)
LD50 Intravenous – Mouse
Result: 440 mg/kg

Skin corrosion/irritation
Based on available data, classification data are not met

Serious eye damage/irritation
Based on available data, classification data are not met

Respiratory or skin sensitization
May cause an allergic skin reaction. May cause allergy or asthma symptoms of breathing difficulties if inhaled.

Germ cell mutagenicity
Based on available data, classification data are not met

Carcinogenicity
Suspected of causing cancer.

Components:

Nickel (CAS no.: 7440-02-0):
IARC: 2B - Possibly carcinogenic to humans
NTP: Reasonably anticipated to be Human Carcinogen

Reproductive toxicity
May damage fertility or the unborn child

STOT-single exposure
Based on available data, classification data are not met

STOT-repeated exposure
May cause damage to organs through prolonged or repeated exposure

Aspiration hazard
Based on available data, classification data are not met

Additional information
SECTION 12: Ecological information

Toxicity
No data available on product

Components:

Manganese (CAS no.: 7439-96-5):
LC50 - Daphnia magna – 48h
Result: 29 mg/L

Nickel (CAS no.: 7440-02-0):
EC50 - Daphnia magna – 48h
Result: 1 mg/L

LEAD (CAS no.: 7439-92-1):
LC50 - Cyprinus carpio – 96h
Result: 0.44 mg/L

Persistence and degradability
No data available on product

Bioaccumulative potential
No data available on product

Mobility in soil
No data available.

Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects
No data available.

SECTION 13: Disposal considerations

Disposal of the product
Disposal should be in accordance with applicable Federal, State and local laws and regulations. Local regulations may be more stringent than State or Federal requirements.

Disposal of contaminated packaging
Dispose of as unused product.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods
SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

**California Prop. 65 Components**

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

- Chemical name: Nickel (Metallic)
  - CAS number: 7440-02-0
  - 10/01/1989 – Cancer

- Chemical name: Nickel compounds
  - CAS number: 7440-02-0
  - 05/07/2004 – Cancer

- Chemical name: Lead and Lead Compounds
  - CAS number: 7439-92-1
  - 10/01/1992 – Cancer
  - 02/27/1987 - Developmental Toxicity
  - 02/27/1987 - Female Reproductive Toxicity
  - 02/27/1987 - Male Reproductive Toxicity

**Massachusetts Right To Know Components**

- Tungsten (CAS no.: 7440-33-7)
- Chromium (CAS no.: 7440-47-3)
- Zinc (CAS no.: 7440-66-6)
- Manganese (CAS no.: 7439-96-5)
- Nickel (CAS no.: 7440-02-0)
- LEAD (CAS no.: 7439-92-1)
- Silicon (CAS no.: 7440-21-3)

**New Jersey Right To Know Components**

- Tungsten (CAS no.: 7440-33-7)
- Chromium (CAS no.: 7440-47-3)
- Zinc (CAS no.: 7440-66-6)
- Manganese (CAS no.: 7439-96-5)
- Nickel (CAS no.: 7440-02-0)
- LEAD (CAS no.: 7439-92-1)
Silicon (CAS no.: 7440-21-3)

Pennsylvania Right To Know Components
Tungsten (CAS no.: 7440-33-7)
Chromium (CAS no.: 7440-47-3)
Zinc (CAS no.: 7440-66-6)
Manganese (CAS no.: 7439-96-5)
Nickel (CAS no.: 7440-02-0)
LEAD (CAS no.: 7439-92-1)
Silicon (CAS no.: 7440-21-3)

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
Chromium (CAS no.: 7440-47-3)
Zinc (fume or dust) (CAS no.: 7440-66-6)
Manganese (CAS no.: 7439-96-5)
Nickel (CAS no.: 7440-02-0)
LEAD (CAS no.: 7439-92-1)

HMIS Rating

<table>
<thead>
<tr>
<th>Carbon &amp; Alloy Steel</th>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
<th>PERSONAL PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

NFPA Rating

0 0
SECTION 16: Other information

16.1 Further information/disclaimer

Date of issue: February 28, 2019.

DISCLAIMER: The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigation to determine the suitability of information for their particular purposes. All materials may present unknown hazards and should be used with caution. In no event shall we be held liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, whatsoever arising, even if we have been advised of the possibility of such damages.