

1. Identification :

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| Product identifier | Carbon or Alloy, Ground Engaging Tools |
| Other means of identification | Forged and Cast Products, HL-MSDS-001. |
| Synonyms | Steel |
| Recommended use | Earth Excavation. |
| Recommended restrictions | None known. |
| Document & Issue date | HL-MSDS-001, May 15, 2017 |
| Address | H&L Tooth Company 10055 E. 56 th Street N. Tulsa, Oklahoma 74117 |
| Telephone number | (918) 272-0951 |
| Contact person | Customer Service |
| Emergency telephone | (918) 272-0951 |
| E-mail | Sales@hltooth.com |

2. Hazard(s) identification :

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| Physical hazards | Not classified. |
| Health hazards | Not classified. |
| OSHA defined hazards | Not classified. |
| Hazard symbol | None |
| Signal word | None |
| Hazard statement | None |
| Precautionary statement | |
| Prevention | Avoid creating dust. |
| Response | Wash skin with soap and water. |
| Storage | Store away from incompatible materials. |
| Disposal | Dispose of waste and residues in accordance with local authority requirements. |
| Hazard(s) not classified (HNOC) | None |
| Supplemental information | Manufactured and shipping state; this product is considered non-hazardous. Processing may generate hazardous fumes and dusts. Welding, cutting and metalizing can generate ozone. Ozone can cause irritation of eyes, nose and respiratory tract. |

3. Composition/information on ingredients :

| Chemical name | CAS number | Percent (%) |
|---------------|------------|-------------|
| Carbon | 7440-44-0 | 0.01-1.10 |
| Chromium | 7440-47-3 | 0.01-13.00 |
| Copper | 7440-50-8 | 0.04-0.7 |
| Manganese | 7439-96-5 | 0.25-2.0 |
| Molybdenum | 7439-98-7 | 0.01-1.10 |
| Nickel | 7440-02-0 | 0.01-3.80 |
| Phosphorous | 7723-14-0 | .035 Max |
| Silicon | 7440-21-3 | 0.15-2.20 |
| Sulfur | 7704-34-9 | 0.001-0.15 |
| Tungsten | 7440-33-7 | 0.00-0.18 |
| Vanadium | 7440-62-2 | 0.01-.50 |

The product is an alloy. Other alloys and trace elements may be present, depending on the product, in quantities generally less than 0.5%. These elements may include Boron, Calcium, Niobium, Nitrogen, Titanium, Aluminum, Tin, Zinc, Bismuth, Beryllium, Selenium.

4. First-aid measures :

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| Inhalation | In case of inhalation of fumes from welding product: Move into fresh air and keep at rest. Get medical attention if symptoms persist. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration. |
| Skin contact | Wash skin with soap and water. In case of burns with hot metal, rinse with plenty of cold water. If burns are severe, consult a physician. If skin irritation or an allergic skin reaction develops, get medical attention. |
| Eye contact | Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention promptly if symptoms persist or occur after washing. |
| Ingestion | Solid steel: Not applicable. Dust: Get medical attention if any discomfort continues. |
| Most important Symptoms/effects, acute and delayed | Exposed individuals may experience tearing, redness, and discomfort. High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness, and irritation of the throat, followed by weakness, muscle pain, fever, and chills. |

5. Fire-fighting measures :

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| Suitable extinguishing media | None known |
| Unsuitable extinguishing media | None known |
| Specific hazards from the chemical | At temperatures above the melting point, may liberate fumes of nickel, and zinc oxide. |
| Special protective equipment | Self-contained breathing apparatus and full protective clothing must be worn in case of fire. |
| Fire-fighting equipment/instructions | Use standard firefighting procedures and consider the hazards of other involved materials. |

6. Accidental release measures :

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| Personal precautions, protective equipment and emergency procedures | Cold solid metal: No special precautions are necessary beyond normal good hygiene practices. Section 8 of the SDS for additional personal protection advice when handling this product hot. Heated metal: Avoid contact with hot material. Wear protective clothing as described in Section 8 of this safety data sheet. |
| Methods and materials for containment and cleaning up | In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. |
| Collect for recycling. Environmental precautions | No specific precautions. |

7. Handling and storage :

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| Precautions for safe handling | Avoid contact with sharp edges and hot surfaces. Use appropriate gloves and tools to ensure safe handling. Use work methods which minimize dust/fume production. Do not breathe fumes and dusts. Follow the recommendations in ANSI Z49.1, Safety in welding and cutting (ANSI=American National Standard Institute). |
| Conditions for safe storage, including any incompatibilities | Store in a dry place. Store away from: Acids. |

8. Exposure controls/personal protection :

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| Occupational exposure limits US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050) | | |
| Chemical name | CAS number | OSHA/ACGIH |
| Iron | 7439-89-6 | |
| Chromium | 7440-47-3 | 1.0/0.5 |
| Manganese | 7439-96-5 | 5.0/0.1 |
| Nickel | 7440-02-0 | 1.0/1.5 |
| Silicon | 7440-21-3 | 5.0/10.0 |
| Copper | 7440-50-8 | 1.0/1.0 |
| Carbon black | 1333-86-4 | 3.5/3.0 |
| Antimony | 7440-36-0 | 0.5/0.5 |
| Arsenic | 7440-38-2 | 0.01/0.01 |
| Cobalt | 7440-48-4 | 0.01/0.02 |
| Lead | 7439-92-1 | 0.05/0.05 |
| Appropriate engineering controls | Adequate ventilation should be provided so that exposure limits are not exceeded. Use local exhaust when welding, burning, sawing, brazing, grinding or machining to prevent excessive dust or fume exposure. | |
| Individual protection measures | | |
| Eye/face protection | Risk of contact: Wear approved safety goggles. Use of safety glasses or goggles is required for welding, burning, sawing, brazing, grinding or machining operations. | |
| Hand protection | Wear protective gloves. Risk of contact: Wear suitable protective clothing. | |
| Respiratory protection | Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. | |
| Thermal hazards | When material is heated, wear gloves to protect against thermal burns. Thermally protective apron and long sleeves are recommended when volume of hot material is significant. | |
| General hygiene | Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements. | |

9. Physical and chemical properties :

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| Appearance | Massive, solid metal. |
| Physical state | Solid. |
| Form | Solid. |
| Color | Metallic gray. |
| Odor | None. |
| Odor threshold | Not applicable. |
| pH | Not applicable. |

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| Melting point | 2750 °F (1510 °C) |
| Initial boiling point and boiling range | Not applicable. |
| Flash point | Not applicable. |
| Evaporation rate | Not applicable. |
| Flammability (solid, gas) | Not applicable. |
| Flammability limit - lower (%) | Not applicable. |
| Flammability limit - upper (%) | Not applicable. |
| Explosive limit - lower (%) | Not applicable. |
| Explosive limit - upper (%) | Not applicable. |
| Vapor pressure | Not applicable. |
| Vapor density | Not applicable. |
| Relative density | Not applicable. |
| Solubility(ies) | Insoluble |
| Partition coefficient (n-octanol/water) | Not applicable. |
| Auto-ignition temperature | Not applicable. |
| Decomposition temperature | Not applicable. |
| Viscosity | Not applicable. |
| Other information | Not applicable. |
| Solubility (other) | Not applicable. |

10. Stability and reactivity :

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| Reactivity | Stable at normal conditions. |
| Chemical stability | This product is stable under expected conditions of use. |
| Possibility of hazardous reactions | Will not occur. |
| Conditions to avoid | Contact with incompatible materials. Contact with acids will release flammable hydrogen gas. |
| Incompatible materials | Strong acids. Oxidizing agents. |
| Hazardous decomposition | At temperatures above the melting point, may liberate fumes containing oxides of Iron and alloying elements. |

11. Toxicological information :

Information on likely routes of exposure

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| Ingestion | Solid steel: Not relevant, due to the form of the product. However, ingestion of dusts generated during working operations may cause nausea and vomiting. |
| Inhalation | No inhalation hazard under normal conditions. Welding, burning, sawing, brazing, grinding or machining operations may generate fumes and dusts of metal oxides. |
| Skin contact | Under normal conditions of intended use, this material does not pose a risk to health. Dust may irritate skin. Contact with hot material can cause thermal burns which may result in permanent damage. |
| Eye contact | Under normal conditions of intended use, this material does not pose a risk to health. Contact with hot material can cause thermal burns which may result in permanent damage. Grinding and sanding this product may generate dust. Dust may irritate the eyes. |
| Symptoms related to the physical, chemical & toxicological characteristics | Exposed individuals may experience eye tearing, redness, and discomfort. High concentrations of freshly formed fumes/dusts of metal oxides can produce symptoms of metal fume fever. Typical symptoms last 12 to 48 hours and are characterized by metallic taste in the mouth, dryness, and irritation of the throat, followed by weakness, muscle pain, fever, and chills. |

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| Acute toxicity Components | Processing may generate hazardous fumes and dusts. Welding, cutting and metalizing can generate ozone. Ozone can cause irritation of eyes, nose and respiratory tract. |
| Skin corrosion/irritation | Dust may irritate skin. |
| Serious eye damage/eye irritation | Dust may irritate the eyes. |
| Respiratory sensitization | Not relevant, due to the form of the product. Contains nickel: May cause allergy or asthma symptoms or breathing difficulties if inhaled. This ingredient is bound within the product and release is not expected under normal condition. |
| Skin sensitization | Contains nickel: May cause an allergic skin reaction. |
| Germ cell mutagenicity | Not relevant, due to the form of the product. |
| Carcinogenicity | Not relevant, due to the form of the product. Inhalation of carbon black dust may cause cancer, however due to the physical form of the product inhalation of dust is not relevant. Nickel and Nickel Compounds, Lead and Lead Compound, and certain Chromium Compounds (e.g., hexavalent chromium) are considered known or possible carcinogens. This ingredient is bound within the product and release is not expected under normal condition. |
| <i>IARC Monographs. Overall Evaluation of Carcinogenicity</i> | |
| Arsenic (CAS 7440-38-2) | 1 Carcinogenic to humans. |
| Carbon black (CAS 1333-86-4) | 2B Possibly carcinogenic to humans. |
| Chromium (CAS 7440-47-3) 3 | Not classifiable as to carcinogenicity to humans. |
| Cobalt (CAS 7440-48-4) | 2B Possibly carcinogenic to humans. |
| Lead (CAS 7439-92-1) | 2B Possibly carcinogenic to humans. |
| Nickel (CAS 7440-02-0) | 2B Possibly carcinogenic to humans. |
| <i>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</i> | |
| Arsenic (CAS 7440-38-2) | Cancer |
| Reproductive toxicity | Not relevant, due to the form of the product. |
| Specific target organ toxicity – single exposure | No data available. |
| Specific target organ toxicity – repeated exposure | Not relevant, due to the form of the product. Contains Manganese: Causes damage to organs (lung) through prolonged or repeated exposure by inhalation. This ingredient is bound within the product and release is not expected under normal condition. |
| Aspiration hazard | Due to the physical form of the product it is not an aspiration hazard. |
| Chronic effects | Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to benign pneumoconiosis. Repeated overexposure to lead, arsenic, and nickel can increase the risk of developing cancer. Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases. Exposure to manganese fume/dust can affect the central nervous system (apathy, drowsiness, weakness and other chronic symptoms such as postural tremors). The ingredients of the alloy are bound within the product and release is not expected under normal conditions. |

12. Ecological information :

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| Eco toxicity | The environmental hazard of the product is considered to be limited. |
| Persistence and degradability | No data available. |
| Bio accumulative potential | No data available on bioaccumulation. |
| Mobility in soil | Not relevant, due to the form of the product. |
| Other adverse effects | None known. |

13. Disposal considerations :

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| Disposal instructions | Dispose waste and residues in accordance with applicable federal, state, and local regulations. |
| Hazardous waste code | Not regulated. |
| Waste from residues of product | Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Recover and recycle, if practical. |
| Contaminated packaging | Emptied containers may retain product residue, follow label warnings. |

14. Transport information :

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| DOT | Not regulated as a hazardous material by DOT. |
| IATA | Not regulated as a dangerous good. |
| IMDG | Not regulated as a dangerous good. |

15. Regulatory information :

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)
Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA) Hazard categories

Immediate Hazard – No Delayed Hazard – Yes Reactivity Hazard - No

Pressure Hazard – No Fire Hazard - No

SARA 302 Extremely hazardous substance – NO

SARA 311/312 Hazardous chemical - Only if fume or dust emitted or released from a manufactured solid that is being modified

SARA 313 (TRI reporting) YES - for toxic components

Toxic Substances Control Act (TSCA) Inventory YES - for toxic components

16. Other information :

NFPA Rating and Symbol:

