



# MATERIAL SAFETY DATA SHEET

Form WI04-11A Rev. 1

Part Number(s):  
03-925-21 thru 37



Product Name: Key 4 Loop Accu Wire

Release Date: May 10, 2007

## 1. Product and Company Identification

|  |   |
|--|---|
| <b>Trade Name &amp; Synonyms</b><br>Key 4 Loop Accu Wire | <b>MSDS Code Number</b><br>Refer to part number                   |
| <b>Chemical Name</b><br>NA                               | <b>Manufacture / Distributor</b><br>GAC International Inc.        |
| <b>C.A.S. Number</b><br>1309-37-1                        | <b>Address</b><br>355 Knickerbocker Ave.<br>Bohemia, NY USA 11716 |
| <b>Grades or Minor Variant Identities</b><br>NA          | <b>Information Telephone Number</b><br>1-631-419-1700             |
| <b>Product Use (for Canada)</b><br>NA                    | <b>Emergency Telephone Number</b><br>1-631-419-1700               |

## 2. Composition of Ingredients

| Hazardous Components  | PEL /TLV8Hour TWA unless otherwise noted   | C.A.S. Number | Exposure Limits | %     |
|---|--|---------------|-----------------|-------|
| Iron  | PEL 10.0 MG/M3<br>TLV 5.0 MG/M3  | 1309-37-1     | NA              | 69.50 |
| Chromium  | PEL 1.0 MG/M3<br>TLV 0.5 MG/M3   | 7440-47-3     | NA              | 18.50 |
| Nickel  | PEL 1.0 MG/M3<br>TLV 1.0 MG /M3  | 7440-02-0     | NA              | 9.00  |
| Manganese   | PEL C5.0 MG/M3<br>TLV C5.0 MG/M3(dust) 1.0 MG/M3<br>(fume) 3.0 MG/M3 STEL (fume) | 7439-96-5     | NA              | 1.00  |
| Cobalt  | PEL 0.1 MG/M3<br>TLV 0.1 MG/M3   | 7440-48-4     | NA              | .75   |
| * These substances are regulated in their oxide form. The above percent concentrations are considered nominal and are provided for industrial hygiene purposes. They do not represent a certification of content. |  |               |                 |       |

## 3. Hazard Identification

### Emergency Overview

Specialty steel alloys are generally not considered hazardous in the form shipped (solid, bars, billets, rods, wire, etc.). However, if your process involves grinding, melting, welding, cutting, or any other process that causes release of dust or fume, hazardous levels of dust or fume of the constituents of these alloys could be generated. The following is a list of potential health effects for all hazardous elements that are possibly contained in any of our alloys. Please refer to section II titled "Hazard ingredients" for a list of those specific elements contained in this particular alloy.

| Routes of Exposure   | Signs and Symptoms  | Single, Repeated, or Lifetime Exposure | Severity (Mild, Moderate, Severe) | Acute and Chronic Health Effect(s) | Target Organ(s) |
|--|---|--|-----------------------------------|------------------------------------|-----------------|
| <b>Eye</b><br>Constituents of these alloys may cause effects directly upon eyes. | * <b>Aluminum:</b> Metal dust and oxide is generally considered a "nuisance" particulate. May cause irritation of the eyes in excessive concentrations. Boron oxide: Has caused irritation of the eyes of experimental animals. It may have the same effect on humans.<br><b>Copper:</b> Fume or dust causes irritation of the eyes. Hafnium: Hafnium salts have caused irritation of the eyes in experimental animals.<br><b>Molybdenum:</b> Oxides of molybdenum have caused irritation of the eyes in experimental animals.<br><b>Tin:</b> Generally considered to exhibit a low order of toxicity. May cause irritation of the eyes.<br><b>Titanium dioxide:</b> Considered to be a | NA                                     | NA                                | NA                                 | NA              |



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|  |   |   |           |           |           |
|--|---|---|-----------|-----------|-----------|
|  | <p>"nuisance" particulate. Can cause irritation of the eyes in high concentrations.<br/>Vanadium pentoxide: Dust and fumes may cause irritation of the eyes.</p>  |   |           |           |           |
| <p><b>Skin</b><br/>Constituents of these alloys may cause effects directly upon the skin.</p>                      | <p>* <b>Beryllium:</b> Can cause dermatitis.<br/>Boron oxide: Has caused irritation of the skin of experimental animals. It may have the same effect on humans.<br/><b>Cobalt:</b> Fume causes an allergic skin rash.<br/><b>Hafnium:</b> Hafnium salts have caused irritation of the skin in experimental animals. <b>Nickel:</b> Skin contact can also cause an allergic skin rash.<br/><b>Tin:</b> Generally considered to exhibit a low order of toxicity. May cause irritation of the skin.<br/><b>Zirconium:</b> Generally considered to have a low order of toxicity. Skin rash has been reported from exposure to zirconium containing deodorants.</p>  | <p>Vanadium pentoxide: Repeated exposures may cause allergic skin rash.</p> | <p>NA</p> | <p>NA</p> | <p>NA</p> |
| <p><b>Inhalation</b><br/>Exposure to specialty steel alloys occurs primarily from inhalation of dust or fumes.</p> | <p>* <b>Aluminum:</b> Metal dust and oxide is generally considered a "nuisance" particulate. May cause irritation of the nose and throat in excessive concentrations.<br/>* <b>Beryllium:</b> Also causes a severe chronic lung disease known as "chronic beryllium disease" which is often fatal.<br/><b>Boron oxide:</b> Has caused irritation of the nose of experimental animals. It may have the same effect on humans.<br/><b>Chromium:</b> Ferrochrome alloys have been associated with lung changes in workers exposed to these alloys.<br/><b>Cobalt:</b> Fume or dust causes irritation of the nose and throat. Also has been reported to cause respiratory disease with symptoms ranging from cough and shortness of breath to permanent disability and death. The symptoms frequently go away when exposure has stopped, but sometimes the symptoms progress after exposure has ceased.<br/><b>Copper:</b> Fume or dust causes irritation of the nose and throat and a flu-like illness called metal fume fever. Symptoms include fever, muscle aches, nausea, chills dry throat, cough, weakness, and sweet or metallic taste in the mouth.<br/><b>Hafnium:</b> Other hafnium compounds have caused liver damage in animals on prolonged feeding.<br/><b>Iron oxide:</b> Repeated exposure to iron oxide fume over a period of years may cause x-ray changes of the lungs, but does not cause an exposed person to become ill.<br/><b>Manganese:</b> Inhalation of manganese fumes may cause "metal fume fever" with symptoms of chills, fever, nausea, cough, dry throat, weakness, muscle aches, and a sweet or metallic taste in the mouth.<br/>Prolonged or repeated exposure may affect the nervous system, with difficulty in walking and balancing, weakness or cramps in the legs, hoarseness of the voice, and trouble with memory or judgment, unstable emotions or unusual irritability. The respiratory system may also be affected by pneumonia like illness with symptoms of coughing, fever, chills, body ache, chest</p> | <p>NA</p>   | <p>NA</p> | <p>NA</p> | <p>NA</p> |



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|--|---|----|----|----|----|
|  | <p>pain and other common signs of pneumonia.</p> <p><b>Molybdenum:</b> Oxides of molybdenum have caused irritation of the nose and throat, weight loss and digestive disturbances in experimental animals.</p> <p><b>Nickel:</b> Fumes are respiratory irritants and may cause respiratory disease. Nickel and its compounds have been reported to cause cancer of the lungs and sinuses.</p> <p><b>Tantalum:</b> Generally considered to have a low order of toxicity but has produced transient lesions of the lungs in experimental animals.</p> <p><b>Tin:</b> Generally considered to exhibit a low order of toxicity. May cause irritation of the nose, throat.</p> <p><b>Titanium dioxide:</b> Titanium dioxide: Considered to be a "nuisance" particulate. Can cause irritation of the nose, throat in high concentrations. Slight lung changes may occur.</p> <p><b>*Tungsten:</b> Metal and insoluble compounds are generally considered to have a low order of toxicity, but have produced lung changes in experimental animals.</p> <p><b>Vanadium pentoxide:</b> Dust and fume may cause irritation of the nose, throat and respiratory tract. It may also cause bronchitis with wheezing and chest pain. A greenish discoloration of the tongue may occur after symptoms have occurred following initial exposure. Repeated exposure may cause severe symptoms of the same nature. Repeated exposures may cause chronic bronchitis.</p> |    |    |    |    |
| <p><b>Ingestion</b><br/>Certain constituents may also be harmful if swallowed.</p> | NA  | NA | NA | NA | NA |
| <p><b>Other</b></p>  | <p><b>References:</b> Health hazard data for the elements marked with an (*) was taken from ACGIH's documentation of TLV's. Health hazard data for the remaining elements was taken from the NIOSH/OSHA "Occupational health guidelines for chemical hazards". For additional sources of health information on potential health effects of these substances, please refer to OSHA's hazard communication standard (29CFR 1910.1200) Appendix C.</p> <p><b>Carcinogenic references:</b> Chromium, cobalt-chromium alloys and nickel have been identified by the international agency for research on cancer (IARC) and/or the national toxicology program (NTP) as potential cancer causing agents.</p>  | NA | NA | NA | NA |
| <p><b>Medical Conditions Aggravated by Exposure</b><br/>NA</p>                     |   |    |    |    |    |
| <p><b>Carcinogenicity (IARC, NTP)</b><br/>NA</p>                                   |   |    |    |    |    |
| <p><b>Potential Environmental Effects</b><br/>NA</p>                               |   |    |    |    |    |



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## 4. First Aid Measures

| Routes of Exposure   | First Aid Instructions  | Immediate Medical Attention       | Delayed Effects |
|--|---|-----------------------------------|-----------------|
| Eye  | Flush thoroughly with water.  | Consult a physician.              | NA              |
| Skin   | Wash with water and mild detergent.   | Consult a physician.              | NA              |
| Inhalation   | Move person to fresh air until recovered.                                       | Consult a physician.              | NA              |
| Ingestion  | While ingestion of large enough quantities to cause health effects is unlikely. | Consult a physician if it occurs. | NA              |
| Other  | NA  | NA                                | NA              |
| <b>Note to Physicians (Treatment, Testing, and Monitoring)</b> |   |                                   |                 |
| NA   |   |                                   |                 |

## 5. Fire and Explosion Data

|   |   |   |  |
|---|---|---|--|
| <b>Flashpoint &amp; Method:</b><br>°C / °F NA           | <b>Flammable (Explosive) Limits in Air</b><br>LEL: NA UEL: NA | <b>Autoignition Temperature</b><br>NA   | <b>Other</b><br>Unless otherwise noted, none.<br>Product is a solid metal. |
| <b>Flame Propagation or Burning</b><br>NA               | <b>Properties Contributing to Fire Intensity</b><br>NA        | <b>Flammability Classification</b><br>Health- , Flammability- , Reactivity-<br>NA |  |
| <b>Extinguishing Media</b><br>NA                        |   | <b>Extinguishing Media to Avoid</b><br>NA   |  |
| <b>Protection and Procedures for Firefighters</b><br>NA |   |   |  |
| <b>Unusual Fire and Explosion Hazards</b><br>NA         |   |   |  |

## 6. Accidental Release Measures

|   |
|---|
| <b>Containment Techniques</b><br>NA   |
| <b>Spill/Leak Clean-Up Procedures and Equipment</b><br>Product is a solid metal as shipped. No potential for spill or leak. |
| <b>Evacuation Procedures</b><br>NA  |
| <b>Special Instructions</b><br>NA   |
| <b>Reporting Requirements</b><br>NA   |

## 7. Handling and Storage

|  |
|--|
| <b>Handling Practices and Warnings</b><br>NA           |
| <b>Storage Practices and Warnings</b><br>(°C / °F). NA |



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## 8. Exposure Control/Personal Protection

|   |   |   |
|---|---|---|
| <b>Ventilation</b><br>If your process causes a release of dust or fume, use local and general exhaust ventilation to keep airborne concentrations of dust or fumes below the TLV. |   | <b>Other Engineering Controls</b><br>NA |
| <b>Routes of Entry:</b>   | <b>Personal Protective Equipment (PPE) for Normal Use:</b>  | <b>PPE for Emergencies:</b>             |
| <b>Eye/Face</b>   | If your process involves grinding or any other action that causes the release of dust or fumes, approved safety glasses or goggles should be worn.  | NA                                      |
| <b>Skin</b>   | Gloves and barrier creams may be necessary to prevent skin sensitization and dermatitis.  | NA                                      |
| <b>Inhalation</b>   | If your process causes a release of dust or fume in excess of the permissible exposure limit, NIOSH approved respirators for protection against airborne dust or fumes should be worn. Respirators should be used in accordance with 29 CFR 1910.134. | NA                                      |
| <b>General Hygiene Considerations and Work Practices</b><br>NA  |   |   |
| <b>Protective Measures During Repair and Maintenance of Contaminated Equipment</b><br>NA  |   |   |
| <b>Other Protective Measures and Equipment</b><br>None.   |   |   |

## 9. Physical and Chemical Characteristics

|   |   |   |
|---|---|---|
| <b>Appearance</b><br>Solid, odorless metal.   |   | <b>Odor</b><br>Odorless metal   |
| <b>Normal Physical State:</b><br><input type="checkbox"/> Liquid <input type="checkbox"/> Gas<br><input checked="" type="checkbox"/> Solid <input type="checkbox"/> _____ (Other) |   | <b>Boiling Point</b> °C / °F High<br><b>Melting Point</b> °C / 2400 to 2800°F<br><b>Freezing Point</b> °C / °F NA |
| <b>Specific Gravity or Density (H<sub>2</sub>O=1)</b><br>7.5 to 8.5   | <b>Solubility in Water</b><br>Insoluble | <b>pH</b><br>NA   |
| <b>Vapor Pressure (mm Hg @ 20°C)</b><br>Nil   | <b>Vapor Density (AIR= 1)</b><br>Nil    | <b>Evaporation Rate (Butyl Acetate = 1)</b><br>NA   |
| <b>Other</b><br>NA  |   |   |

## 10. Stability and Reactivity Data

|  |  |  |
|--|--|--|
| <b>Incompatibility (Materials to Avoid)</b><br>None  |  |  |
| <b>Hazardous Products Produced During Decomposition</b><br>None  |  |  |
| <b>Hazardous Polymerization?</b><br><input type="checkbox"/> May Occur <input checked="" type="checkbox"/> May Not Occur |  | <b>Conditions to Avoid</b><br>°C / °F NA |
| <b>Stability?</b><br><input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable                        |  | <b>Conditions to Avoid</b><br>°C / °F NA |

## 11. Toxicological Information

|  |
|--|
| <b>Toxicity Data, Epidemiology Studies, Carcinogenicity, Neurological Effects, Genetic or Reproductive Effects, or Structure Activity Data</b><br>NA |
|--|



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## 12. Ecological Information

Toxicity, Environmental Fate, Physical/Chemical Data, or Other Data Supporting Environmental Hazard Statements

NA

## 13. Disposal Considerations

Regulations

NA

Properties (Physical/Chemical) Affecting Disposal

NA

## 14. Transport Information

Regulated for shipping?

Yes  No NA

Proper Shipping Name

Key 4 Loop Accu Wire

Packing Group

NA

Do changes in quantity, packaging, or shipment method change product classification?

Yes  No NA

Hazard Class

NA

Identification Number

NA

Other

NA

## 15. Regulatory Information

Federal Regulations

NA

International Regulations

NA

Other

NA

## 16. Other Information

Supplier Number: 22/ 3

Supplier Release: November 1, 1985

N/A = not applicable. NA = not available, N/E = not established. N/D = not determined.