G&S Titanium, Inc.
SAFETY DATA SHEET

Revised 05/19/2015

SECTION 1: COMPANY AND PRODUCT IDENTIFICATION

MANUFACTURER: G&S Titanium, Inc.
Address: 4000 East Lincoln Way, Wooster, Ohio 44691

Telephone No. (330)263-0564
Emergency No. 800-424-9300 Chemtrec

Trade Name: Cobalt Base Alloys
Classification: Metal
Recommended Use: Weld Wire, Bar, Billet

SECTION 2: HAZARD IDENTIFICATION

Reports Of Carcinogenicity:
Ntp: Unknown
Iarc: Yes
Health Hazards Acute And Chronic:
Long Term Exposure: Adverse Effects May Result From Long Time Exposure To Welding Fumes, Gases, Or Dusts. These Effects May Include Skin Sensitization, Neurological Damage, & Respiratory Disease Such As Bronchial Asthma, Lung Fibrosis Or Pneumoconiosis.
Explanation Of Carcinogenicity:
Nickel And Chromium Have Been Determined By The Iarc To Be Suspected Carcinogens.
Effects Of Overexposure:
Short Term Exposure: Metallic Taste; Nausea; Tightness Of Chest; Fever; Irritation Of Eyes, Nose, Throat And Skin; Loss Of Consciousness/Death Due To Welding Gases Or Lack Of Oxygen.
Medical Condition Aggravated By Exposure: Aggravation Of Preexisting Respiratory Or Allergic Conditions May Occur In Some Workers.

SECTION 3: COMPONENTS/INFORMATION ON INDIGRIDENTS

MOLYBDENUM	CAS: 7439-98-7
CARBON	CAS: 7440-44-0
COBALT	CAS: 7440-48-4
COPPER	CAS: 7440-50-8
IRON	CAS: 7439-89-6
NICKEL	CAS: 7440-02-0
CHROMIUM	CAS: 7440-47-3
TUNGSTEN	CAS: 7440-33-7

SECTION 4: FIRST AID MEASURES

First Aid: In Case Of Electric Shock, Turn Off Power Prior To Removal From Exposure Area And Administration Of First Aid.
Inhalation: Remove To Fresh Air. If Breathing Is Difficult Administer Oxygen. If Not Breathing Begin Artificial Respiration. If No Detectable Pulse Begin External Heart Massage.
Skin: Wash Affected Area With Soap And Water.
Eyes: Flush With Large Amounts Of Fresh Water For At Least 15 Minutes.
Ingestion: Seek Medical Attention.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point: Nonflammable

Extinguishing Media: Media Suitable For Surrounding Fire .

Fire Fighting Procedures: Use NIOSH Approved SCBA And Full Protective Equipment .

Unusual Fire/Explosion Hazard: Nonflammable; However, Arcs, Sparks And Molten Metal Can Ignite Flammables And Combustibles Or Cause Explosions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spill Release Procedures: Residue From Cutting Or Grinding Should Be Swept Or Vacuumed And Placed In Suitable Containers For Disposal By Local, State, Or Federal Waste Disposal Regulations.

SECTION 7: HANDLING AND STORAGE

Conditions For Safe Storage: Store In A Cool, Dry Area. Store Away From Acids. See Section 10 For More Information On Incompatible Materials.

SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Respiratory Protection:When Exposure Limits Are Exceeded, Use Proper, OSHA Approved Respirator.
Ventilation:Use Local Exhaust When Cutting, Grinding, Or Welding.
Eye Protection:OSHA Approved Eye Protection.
Other Protective Equipment:OSHA Approved Eye Protection And Protective Clothing: Should Be Used When Cutting, Grinding, Or Welding.
Supplemental Safety And Health Pel/Tlv Exposures Should Be Kept Below Recommedations By OSHA And ACGIH To Insure Proper Health Protection Of Worker.

CARBON **CAS: 7440-44-0** **OSHA PEL3.5 MG/M3** **ACGIH TLV: 3.5 MG/M3**	**MOLYBDENUM** **CAS: 7439-98-7** **ACGIH TLV: 10 MG/M3**	**COBALT** **CAS: 7440-48-4** **OSHA PEL0.1 MG/M3** **ACGIH TLV: 0.02 MG/M3**	**COPPER** **CAS: 7440-50-8** **OSHA PEL1 MG/M3** **ACGIH TLV: 1 MG/M3** **EPA Report Quantity: 5000 LBS** **DOT Report Quantity: 5000 LBS**
IRON **CAS: 7439-89-6**	**NICKEL** **CAS: 7440-02-0** **OSHA PEL1 MG/M3** **EPA Report Quantity: 100 LBS** **DOT Report Quantity: 100 LBS**	**CHROMIUM** **CAS: 7440-47-3** **OSHA PEL1 MG/M3** **ACGIH TLV: 0.5 MG/M3** **EPA Report Quantity: 1 LB** **DOT Report Quantity: 1 LB**	**TUNGSTEN** **CAS: 7440-33-7** **ACGIH TLV: 5 MG/M3**

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

As shipped these are odorless, bare or coated solid rods that are nonflammable, non-explosive, non-reactive and non-hazardous

SECTION 10: STABILITY AND REACTIVITY

Hazardous Decomposition Products: Welding fumes and gases cannot be classified simply. The composition and quantity of these fumes and gases are dependent upon the metal being welded, the procedures followed and the electrodes used. Workers should be aware that the composition and quantity of fumes and gases to which they may be exposed, are influenced by: coatings which may be present on the metal being welded (such as paint, plating, or galvanizing), the number of welders inoperation and the volume of the work area, the quality and amount of ventilation, the position of the welder's head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning and degreasing procedure). When the electrode is consumed, the fumes and gas decomposition products generated are different in percent and form from the ingredients listed in Section 3, The composition of these fumes and gases are the concerning matter and not the composition of the electrode itself. Decomposition products include those originating from the volatilization, reaction, or oxidation of the ingredients shown in Section 3, plus those from the base metal, coating and the other factors noted above.
Reasonable expected fume constituents of this product would include: Complex oxides of cobalt, iron, chromium, tungsten, nickel and carbon. Fume limit for Cr (VI) may be reached before limit of 5 mg/m3 for general welding fumes is reached. Watch the (Cr VI) level.
Rod and electrodes are stable at ordinary temperatures, however, caution should be taken with acids, bases, and oxidizers. Molten metal will react violently with water

Gaseous reaction products may include carbon monoxide and carbon dioxide Ozone and nitrogen oxides may be formed by the radiation from the arc.
One method of determining the composition and quantity of the fumes and gases to which the workers are exposed is to take an air sample from inside the welder's helmet while worn or within the worker's breathing zone. See ANSI/AWS F1.1 publication available from the American Welding Society 550 N.W. LeJeune Road, Miami, Florida 33126

SECTION 11: TOXICOLOGY INFORMATION

Carcinogenicity: OSHA (29 CFR 1910.1200) Lists Nickel And Chromium As Possible Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

Ecological: N/P.
Hazardous Decomposition Products (Cont): Or Electrodes Used. Other Influencing Factors Are The Presence Of Contaminents In The Atmosphere. Decomposition Products From The Welding Or Cutting Operation Include Those From The Volatilization, Reaction And/Or Oxidation Of The Materials In (Ingredients) Section And May Include Oxides Of The Metals, Chromates And Complex Metallics. Gaseous Reaction Products May Include Carbon Monoxide, Ozone And Nitrogen Oxides. Chlorinated Solvents May Be Decomposed Into Toxic Gases Such As Phosgene.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Product: Dispose of in accordance with Federal, State and Local regulations.

Packaging: Dispose of in accordance with Federal, State and Local regulations.

SECTION 14: TRANSPORTATION INFORMATION

Transport Information:N/P.
Ecological Info (Cont): Generated Are Different In Form From The Ingredients Listed In (Ingredients)Section.
New Compounds Not In The Electrodes May Form. The Known Gases And Fumes That May Form During Welding Or Hot Cutting And Their Exposure Limits Are Noted In The Following Table In Section 8

SECTION 15: REGULATORY INFORMATION

Sara Title iii Information: Sara 302 Components - 40 Cfr 355
Appendix A: None.
Section 311/312 Hazard Class - 40 Cfr 370.2: Immediate.
Sara 313 Components - 40 Cfr 372.65: None.
Federal Regulatory Information:
Us Federal Regulations: Tsca (Toxic Substances Control Act) Status: Tsca (United States) The International Ingredients Of This Product Are Listed. Cercla Rq -40 Cfr 302.4: None.
International Regulations:
Inventory Status: Dsl (Canada) The International Ingredients Of This Product Are Listed.
State Regulatory Information: California Proposition 65: None.

SECTION 16: OTHER INFORMATION

None Available.