# SAFETY DATA SHEET (SDS)

For Welding Consumables and Related Products
Conforms to OSHA Hazard Communication Standard 29CFR 1910.1200
Standard Must Be Consulted for Specific Requirements

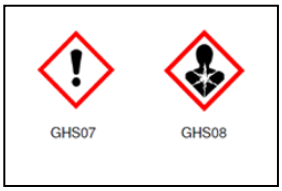
## SECTION I - IDENTIFICATION

| | |
|---|---|
| Manufacturer/Supplier: Washington Alloy Company | Telephone No: 704-598-1325 |
| Address: 7010-G Reames Road, Charlotte, NC 28216 | Emergency No: 704-598-1325 |
| Trade Name: ERTi-1, ERTi-2, ERTi-3, ERTi-4, ERTi-5 (6AL/4V), ERTi-23 ERTi-5ELI (6AL/4V ELI) ERTi-7, ERTi-9 (ERTI-9ELI), ERTi-12, | Specification: AWS A5.16 |
| 6-2-4-2 | AMS 4952 |

## SECTION II - HAZARDOUS MATERIALS*

**GHS Hazard Statement & Classification:** H317 May cause an allergic reaction, H341 Suspected of causing genetic defects, H350 May cause cancer, H361 Suspected of damaging fertility or the unborn child, H373 May cause damage to organs through prolonged or repeated exposure, H412 Harmful to aquatic life with long lasting effects

**Label Elements** –




**Precautionary statement:** 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/vapours/spray. P261: Avoid breathing dust/fume/gas/mist/vapours/spray. P272: Contaminated work clothing should not be allowed out of the workplace. P273: Avoid release to the environment. P280: Wear protective gloves/protective clothing/eye protection/face protection P302+P352: IF ON SKIN: Wash with plenty of soap and water P308+P313: IF exposed or concerned: Get medical advice/attention P314: Get medical advice and attention if you feel unwell P333+P313: If skin irritation or rash occurs: Get medical advice/attention P362+P364: Take off contaminated clothing and wash it before reuse P405: Store locked up P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other Hazards which do not result in GHS classification and Overview**: Electric shock can kill. Wear approved head, hand and body protection, which help to prevent injury from radiation, sparks and electrical shock. Welding arc and sparks can ignite combustibles or flammable materials. See ANSI Z-49.1. This would include wearing welder's gloves and a protective face shield and may include arm protectors, apron, hats, shoulder protection, as well as dark substantial clothing. Welders should be trained not to allow electrically live parts to contract the skin or wet clothing and gloves. The welders should insulate themselves from the work and ground. Arc Rays can injure eyes and burn skin. Read and understand the manufacturer's instructions and precautionary label on this product and your employer's safety practices. See Section XIII.

As shipped these are odorless solid rods that are nonflammable, non-explosive.

**Substance:** 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. Fumes may affect eyes, skin, respiratory system as well as pancreas and liver.

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 in operation 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 III. 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 III, plus those from the base metal, coating and the other factors noted above.

Reasonable expected fume constituents of this product would include: Complex oxides or compounds may be present when using tungsten and or fluxes

| Chemical Identity | CAS No. | EINECS# |
|---|---|---|
| Carbon dioxide | 124-38-9 | 204-696-9 |
| Carbon monoxide | 630-8-0 | 211-128-3 |
| Nitrogen dioxide | 10102-44-0 | - |
| Ozone | 10028-15-6 | 233-069-2 |
| | | |

## SECTION III – COMPOSITION / INFORMATION ON INGREDIENTS

*The term "HAZARDOUS MATERIALS" should be interpreted as a term required and defined in OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200 however the use of this term does not necessarily imply the existence of any hazard.

| Chemical Identity Ingredients | % | CAS No. | EINECS# |
|---|---|---|---|
| Aluminum | 0-8 | 7429-90-5 | 231-072-3 |
| Chromium, Chromium (Cr+6) | 0-11 | 7440-47-3 | 231-157-5 |
| Columbium (Niobium) | 0-2 | 7440-03-1 | 231-113-5 |
| Iron | 0-2 | 7439-89-6 | 231-107-2 |
| Molybdenum | 0-11.5 | 7439-98-7 | 231-107-2 |
| Nickel | 0-1 | 7440-02-0 | 231-111-4 |
| Tantalum | 0-1 | 7440-25-7 | 231-125-5 |
| Tin | 0-4.5 | 7440-31-5 | 231-141-8 |
| Titanium | 73-99 | 7440-32-6 | 231-142-3 |
| Vanadium | 0-13 | 7440-62-2 | 231-171-1 |
| Zirconium | 0-6 | 7440-67-7 | 231-176-9 |
| | | | |

## SECTION IV – FIRST AID MEASURES

Contact with skin, eyes, ingestion or injection should not be a source for exposure with proper protection. **Ingestion:** Avoid contact with metal fume or powers from granular flux which may lead to ingestion. **Inhalation:** If breathing has stop or difficult move to fresh air and as needed perform artificial respiration. Call medical assistance or physician. **Skin Contact:** Remove any contaminated clothing, gloves or other personnel equipment and promptly wash/flush with mild soap and water. For reddish or blistered skin from thermal/arc radiation promptly wash/flush with water. Get medical assistance or physician help as needed. **Eye Contact:** Arc radiation can injure eyes also cause an arc flash – if this occurs, move to dark room removing lenses as required and get rest and cover eyes with non-stick dressings (padded dressing) Removal of dust and fumes requires flushing with abundant amounts of clean water for at least 15 minutes. Get medical assistance or physician help as needed or if issues persist. **Most important symptoms/effects, acute and delayed: Symptoms:** Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, dryness or irritation of nose, throat, or eyes. Pre-existing respiratory issues may be aggregated. Long-term (chronic) over-exposure to welding fumes can lead to siderosis (iron deposits in lung) and is believed to affect pulmonary function. Manganese and Manganese compounds above safe exposure limits can affect or cause irreversible damage to the central nervous system, including the brain: symptoms may result in impaired speech and movement, lack of energy, stiffness in legs, feet, toes, muscular weakness as well as psychological disturbances. Reports of bronchitis and lung fibrosis have also been noted. DUST after skin contact may cause irritation. Should not be a source for exposure with proper protection however; Contact with eyes may cause irritation and ingestion may be harmful. **Hazards:** Welding fumes and gases cannot be classified simply. Refer to Section II under Substance

## SECTION V – FIRE-FIGHTING MEASURES

As shipped these are odorless rods that are nonflammable, non-explosive Welding arcs and sparks can ignite combustibles or flammable materials Read and understand the manufacturer's instructions and precautionary label on this product and your employer's safety practices. Read and understand: American National Standard ANSI Z49.1 *Safety in Welding, Cutting and Allied Processes*, published by the AMERICAN WELDING SOCIETY, 550 N.W. LeJeune Road, Miami, Florida 33126; OSHA *Safety and Health Standards* are published by the U.S. Government Printing Office, 732 North Capitol Street NW, Washington, DC 20401. Also, National Fire Protection Association NFPA 51B, *Standard for Fire Prevention During Welding, Cutting and other Hot*
**Suitable (and unsuitable) extinguishing media:** As shipped these items will not burn however in the event use media recommended for the burning materials and fire situation and surroundings. No unsuitable media known at this time. Do not use water or halogenated on molten metals.
**Specific hazards arising from the chemicals:** Welding arcs and sparks can ignite combustibles or flammable materials
**Specific protective equipment and precautions for firefighters:** Wear self-contained breathing apparatus and full protective clothing in case of fire or when fumes and vapors are present. Follow general fire-fighting precautions as in the workplace. May produce poisonous gases during fire.

## SECTION VI – ACCIDENTAL RELEASE MEASURES

**Personal Precautions, protective equipment and emergency procedures:** With airborne dust and fumes, be sure to use adequate engineering ventilation controls and personal protection to prevent overexposure limits recommendations found in Section VIII.
**Environment precautions:** Control work practices to eliminate environmental release. These products are gray to silver solid metal rods, with no spill or leak hazards as shipped. If product becomes molten dam up with sand type media until it cools back to a solid and recycle as scrap. See section 7, 8 and 13 for other needed data.
**Methods and Materials for containment and cleaning up:** Solid rods can be picked up and placed back in the original container. Clean up immediately while following all safety guidelines as well as using all personal protection safety listed in section VIII. Avoid generating dust and prevent materials from entering and drains, sewers or water sources. Disposal considerations found in Section XIII. When fumes and vapors are present follow general fire-fighting precautions as in the workplace and all applicable regulations.

## SECTION VII – HANDLING AND STORAGE

**Precautions for safe handling:** Handle with care wearing gloves and keep formation of airborne dust and fumes to a minimum. When GTAW process is used with Thorium Tungsten: Thorium Oxide dust may be a SOURCE MATERIAL as defined by the Nuclear Regulatory Commission and is subject to the requirements of 10CFR, Parts 20 and 40. Routine wet-mopping or vacuuming with an explosion-proof vacuum filter, fitted with a HEPA filter should be considered to reduce the accumulation of dusts. **SPECIAL PRECAUTIONS** REQUIRED DURING GRINDING, MACHINING OR ANY OTHER WAYS DUST OR FUMES ARE GENERATED WITH THORIUM or THORIUM OXIDES.

**Storage:** Store in a cool dry place away. Avoid extreme temperatures and incompatible items such as acids, oxidizers and halogens.

If needed use adequate engineering ventilation controls and personal protection to prevent overexposure limits recommendations found in Section VIII.

Also read American National Standard ANSI Z49.1 *Safety in Welding, Cutting and Allied Processes*, published by the AMERICAN WELDING SOCIETY, 550 N.W. LeJeune Road, Miami, Florida 33126; OSHA *Safety and Health Standards* are published by the U.S. Government Printing Office, 732 North Capitol Street NW, Washington, DC 20401. Do not eat or drink while using these products and ensure proper ventilation is used. Wash hands after use thoroughly and ensure good housekeeping. **Conditions for safe storage, including any incompatibilities:** All employees who handle these products should be trained to handle it safely. Open packages of these products/containers on a safe stable surface and must be properly labeled always. Store products in original closed packages, cool dry place, while avoiding extreme temperatures or incompatible items such as acids, oxidizers and halogens. Always follow all regulations in accordance with local/regional/state/national guidelines.

## SECTION VIII – EXPOSURE CONTOLS/PERSONAL PROTECTION

**IMPORTANT:** this section covers the materials from which the product is manufactured. The fumes and gases produced during welding with the normal use of this product are covered under Section II.

*The term "HAZARDOUS MATERIALS" should be interpreted as a term required and defined in OSHA HAZARD COMMUNICATION STANDARD 29 CFR 1910.1200 however the use of this term does not necessarily imply the existence of any hazard. Chemical Identity Ingredients

| Chemical Ingredients | CAS No. | % Weight | Exposure Limit (mg/m3) | | NTP listed | IARC listed |
|---|---|---|---|---|---|---|
| | | | OSHA PEL | ACGIH TLV | | |
| Aluminum | 7429-90-5 | 0 – 8 | 15 (dust), 5 (Resp) | 15 (dust), 5 (as welding fumes) | No | No |
| Chromium | 7440-47-3 | 0 – 11 | 1.0, 0.5 (soluble compounds) | 0.5 | Yes | Yes |
| Chromium (Cr+6) | | | 0.1 | 0.05 | Yes | Yes |
| Columbium (Niobium) | 7440-03-1 | 0 – 2 | None | None | No | No |
| Iron | 7439-89-6 | 0 – 2 | 10 (as Fe2O3 fume) | 5 | No | No |
| Molybdenum | 7439-98-7 | 0 – 11.5 | 15 (dust), 5 (SC) | 10***, 3(Resp), 5 (SC) | No | No |
| Nickel | 7440-02-0 | 0 - 0.9 | 1.0 | 1.5, 0.1 (SC) | No | Yes |
| Tantalum | 7440-25-7 | 0 – 1 | 5 | 10**, 5 (REL) | No | No |
| Tin | 7440-31-5 | 0 - 4.5 | 2 | 2 | No | No |
| Titanium | 7440-32-6 | 73 – 99 | 15 (dust), 5 (Resp) | 10 (as TiO2 dust) | No | No |
| Vanadium | 7440-62-2 | 0 – 13 | 0.5 (dust), 0.1 (fume) | 0.05 (as V3O5) | No | No |
| Zirconium | 7440-67-7 | 0 – 6 | 5 | 10**, 5 | No | No |

Other elements or ingredients may be present but in quantities much less than 1%.(1) Subject to reporting requirements of Section 302, 304, 311, 312, and 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40CFR 370 and 372; (Resp) = Respiratory/ Respiration:, Occupational Safety and Health Administration 29 CFR 1910.1000 Permissible Exposure Limit (PEL). American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV[R]).*Ceiling Limit**Short Term Exposure Limit***Inhalable fraction (SC) = Soluble compounds **ACGIH** - **A**merican **C**onference of **G**overnmental **I**ndustrial **H**ygienists, a professional association which establishes exposure limits used a guideline in control for health hazards but not an indication of safe and dangerous exposure limits **TLV - Threshold Limit Value** - an airborne concentration of a substance, which represents conditions under which it is generally believed that nearly all workers, may be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour & **BEI** - Biological Exposure Indices, represent the levels of determinants which are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV.**OSHA** - U.S. Occupational Safety and Health Administration. **PEL - Permissible Exposure Limit** - this exposure value means the same as a TLV, except that it is limits guideline by OSHA. **Eye Protection:** Wear a safety glasses with side shields, goggles or face shield with a filter lens shade number 3-4 or darker for brazing. Shield other workers by providing screens and flash goggles. Use safety equipment with filter lens of appropriate shade number (per ANSI Z49.1-1988, "Safety in Welding and Cutting"). **Protective Clothing:** Wear approved head, hand and body protection, which help to prevent injury from radiation, sparks and electrical shock. See ANSI Z-49.1. This would include wearing welder's gloves and a protective face shield and may include arm protectors, apron, hats, shoulder protection, as well as dark substantial clothing. Welders/brazers should be trained not to allow electrically live parts or flames to contract the skin or wet clothing and gloves. The operator should insulate themselves from the work and ground. **Ventilation:** Use plenty of ventilation and/or local exhaust at the arc/flame, to keep the fumes and gases below the threshold limit value within the worker's breathing zone and the general work area. Welders should be advised to keep their head out of the fumes. **Respiratory Protection:** Use respirable fume respirator or air supplied respirator when working in a confined space or general work area where local exhaust and/or ventilation does not keep exposure below the threshold limit value.

**HYGIENE/ WORK PRACTICES:** With all chemicals/materials, avoid getting these products ON YOU or IN YOU. Wash hands after handling these products. Do not eat or drink while handling these products. Use ventilation and other engineering controls to minimize potential exposure to these products.

EXPOSURE LIMITS: OSHA nuisance dust standards apply to components shown as "None".

## SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

**Appearance / Color / Odor / Physical state / Form**: Silver-gray metallic solid rods that are odorless; **Threshold / pH / Flash Point / Evaporation Rate / Flammability (Solid, Gas) / Upper & Lower Flammability or Explosive Limits:** No data available ; **Vapor Pressure & / Partition coefficient (n-octanol/water) / Auto-ignition Decomposition temperature :** No data available **Solubility(water/other);** Insoluble **; Density / Relative Density 8.7-9.5; Melting Point 3050°F (607°C) Boiling Point (°F): 5930 Specific Gravity (H2O=1): 4.5**

## SECTION X – STABILITY and REACTIVITY

**Chemical stability:** These products are considered stable as shipped and under normal conditions
**Possibility of hazard reactions:** No data and will not occur.
**Conditions to avoid:** Avoid exposure to extreme temperatures, Incompatible materials.
**Incompatible materials:** Incompatible items such as acids, oxidizers and halogens Strong acids, strong oxidizers, mineral acids, and halogens.
**Hazardous decomposition products:** Read Substance in Section II. Welding and cutting of products that contain Chromium may produce hexavalent chromium and YOU should read and follow OSHA's final rules Fed Register #:71:10099-10385 dated 02-28-2006. Occupational Safety and Health Administration 29 CFR 1910.1000 Permissible Exposure Limit (PEL). The best method to determine the actual composition of generated fumes and gases is to take an air sample from inside the welder's helmet if worn or in breathing zone. For additional information, refer to the American Welding Society Publication, "Fumes and Gases in the Welding Environment".

## SECTION XI- TOXICOLOGICAL INFORMATION

**Oral/Dermal/inhalation**. **Iron:** (Human-child); TDLo: 77 mg/kg. Oral (rat); LD50:30 gm/kg. Intraperitoneal (rabbit); LDLo: 20 mg/kg. Oral (guinea pig); LD50:20 gm/kg. Oral (rat); TDLo: 63 gm/kg/6W-C. Inhalation (rat); 250 mg/m3/6H/4W-I. Intratracheal (rat); TDLo: 450 mg/kg/15W-I. ); **Chromium** (IV) Acute oral toxicity LD 50 (Rat): 27-59 mg/kg Inhalation (Rat 4h): 33-70 mg/m$^3$]. **Aluminum** Inhalation (LC50) (rat); 7.6 mg/l; **Zirconium** Acute oral toxicity (LD50): 3500 mg/kg [Rat]. **Vanadium** Acute oral toxicity (LD50): 221.1-715.7 mg/kg [Rat], Dermal rabbit: 50 mg/kg, inhalation LC50 2.21 mg/l, 1/4 hours [Rat]. **Tin** SnSO4 Rat LD50(2,207 mg/kg) 8,497 mg Sn/m3 Derived value 850 mg Sn/m3 **Skin corrosion or irritation / Serious eye damage or irritation / Respiratory or skin sensitization / Germ cell mutagenicity / Reproductive toxicity / Specific target organ toxicity – single exposure / Specific target organ toxicity – repeated exposure**: Not classified **Carcinogenicity:** Heat Rays can injure eyes and burn skin. **Information on the likely routes of exposures: Ingestion** is not a likely route of exposure for this product or expected under normal use. If swallowed call physician immediately! Do not induce vomiting unless directed by medical personnel. Rinse mouth with water if person is conscious. Never give fluids or induce vomiting if person is unconscious, having convulsions, or not breathing. **Inhalation** of welding/brazing fumes and gases can be dangerous to your health. **Skin/Eye Contact:** Heat Rays can injure eyes and burn skin. **International Agency for Research on Cancer IARC**- has classified welding fumes & Nickel, as a possible carcinogenic to humans (Group 2B). Chromium (IV) evaluation as carcinogenic to humans (Group1). Chromium oxides evaluation not classified as to carcinogenicity to humans (Group 3). **National Toxicology Program** (NTP); Nickel reasonably anticipated to be human carcinogens. Chromium (IV) known to be human carcinogen. OSHA Specifically Regulated Substances Chromium (IV) Cancer; Symptoms related to physical, chemical and toxicological characteristics: **OSHA Specifically Regulated Substances** none; **Symptoms related to physical, chemical and toxicological characteristics: Inhalation:** Chromium (IV) and compounds pose a cancer risk to humans; liver damage, allergic and skin rash have been reported. Nickel and compounds pose a respiratory cancer risk and may give skin itch to dermatitis. **Delayed and immediate effects and also chronic effects from short and long-term exposure:** Short-term (acute) overexposure to welding fumes may result in discomfort such as metal fume fever, dizziness, nausea, dryness or irritation of nose, throat, or eyes. Pre-existing respiratory issues may be aggregated. Long-term (chronic) over-exposure to welding fumes can lead to siderosis (iron deposits in lung) and is believed to affect pulmonary function. There are no other immediate health hazards associated with the wire or rod form of this product. Treat symptoms and eliminate overexposure. **Other information during use**: **Inhalation acute toxicity**: none other known: Carbon dioxide LC Lo (Human, 5 min): 90000 ppm, Carbon monoxide LC 50 (Rat, 4 h): 1,300 mg/l, Nitrogen dioxide LC 50 (Rat, 4 h): 88 ppm, Ozone LC Lo (Human, 30 min): 50 ppm, Chromium (IV) LC 50 (Rat, 4 h): 33-70 mg/m$^3$

## SECTION XII- TOXICOLOGICAL INFORMATION

**Ecotoxicity / Persistence and Degradability / Bio accumulative Potential / Mobility in Soil: Acute; Fish /Aquatic *Invertebrates* Aquatic *Environment* = Iron**= LC50 Channel catfish (Ictalurus punctatus) > 500 mg/l, 96 hours**; Nickel** LC50 Fathead minnows (Pimephales promelas) 2.916 mg/l, 96 hours**,** *EC50 Water flea* (Daphnia obtusa) 1 mg/l, 48 hours **; Aluminum** (Al) LC 50 (Grass carp, white amur ( Ctenopharyngodon idella) 96 h): 0.21-0.31 mg/l**:; Molybdenum** LC50 Rainbow trout, Donaldson trout (Oncorhynchus mykiss) 800 mg/l, 96 hours**,** ***Environment-Toxicity to Aquatic Plants; Chronic:*** *LC50(green algae (scenedesmus dimorphuis) 3 days) 0.0623 mg/l*, **Persistence and Degradability / Mobility in Soil:** No data **Bioaccumulative Potential Accumulation/**The product contains potentially bioaccumulating substances. **Bioaccumulative Potential Bioconcentration Factor (BCF)** Product: No data available. **Specified substance(s):** Nickel Zebra mussel (Dreissana polymorpha), Bioconcentration Factor (BCF): 5,000 – 10,000 (lotic) Biocencentration factor calculated using dry weight tissue concentration: **Other Adverse Effects:** Possibly harmful to aquatic life. Do not allow material to be released to the environment without proper governmental permits. May be very toxic to aquatic organisms.

## SECTION XIII- DISPOSAL CONCIDERATIONS

**Disposal Methods:** Avoid or minimize generating waste**.** When possible collect scrap and by-products with proper id for recycling. Waste disposal must be in accordance with appropriate Federal, National, Provincial, State, and local regulations. These products, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority.

## SECTION XIV- TRANSPORT INFORMATION

**UN Number / UN Proper shipping name / Transport Hazard class (es)/ Packing group / Marine pollutant / Special Precautions**: Not Regulated as Dangerous Good or Not Regulated, No international regulations

## SECTION XV- REGULATORY INFORMATION

**United States: TSCA INVENTORY STATUS:** The components of these products are listed on the TSCA Inventory
**CERCLA REPORTABLE QUANTITY (RQ):** Nickel = 100 lbs. Chromium and Chromium compounds or alloys 5000 lbs.
**EPCRA/SARA Title III 313 Toxic Chemicals** The following metallic components are listed as SARA 313 "Toxic Chemicals" and potential subject to annual SARA 313 reporting. See Section 3 for weight percent. Ingredient & Disclosure threshold: Chromium 1.0% de minimis concentration; Nickel 0.1% de minimis concentration
**Section 311 Hazard Class:** As shipped: Immediate (Acute) In use: Immediate & delayed (Acute)
**California Proposition 65:** These products may contain or produces chemicals known to the State of California to cause cancer, and/or birth defects (or other reproductive harm). (Health and Safety Code section 25249.5 et seq.) Nickel, Titanium Dioxide and Chromium as possible carcinogens
**US State Regulations list:**
**Alaska-Designated Toxic and Hazardous Substances:**
**California-Hazardous Substances Listed substance:** Chromium, Molybdenum, Iron, Iron oxide, Nickel,
**California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**: Hexavalent chromium compounds, Nickel
**CRT: Listed date/Carcinogenic substance**: Hexavalent chromium compounds (2-27-1987), Nickel (10-1-1989) -
**CRT: Listed date/Developmental toxin & Listed date/Male or Female reproductive toxin:** Hexavalent chromium compounds (12-19-2008)
**Florida-Substance List:**
**Illinois-Toxic Substance List:**
**Kansas-Section 302/313 List:**
**Massachusetts-Substance List:** Aluminum, Tantalum, Chromium, Titanium Dioxide, Tin, Molybdenum, Nickel, Vanadium
**Michigan - Critical Materials Register:**
**Minnesota-List of Hazardous Substances:** Welding Fumes Aluminum Nickel, Tin Tantalum, Chromium, Vanadium Molybdenum,
**Missouri-Employer Information/Toxic Substance List:** Molybdenum,
**New Jersey-Right to Know Hazardous Substance List:** Tantalum, Chromium, Tin, Aluminum Hexavalent chromium compounds, Iron, Iron oxide, Molybdenum, Nickel, Titanium Dioxide, Vanadium
**North Dakota-List of Hazardous Chemicals, Reportable Quantities:**
**Pennsylvania-Hazardous Substance List:** Hexavalent chromium compounds, Aluminum Chromium, Molybdenum, Nickel, Tin, Titanium Dioxide, Tantalum, Vanadium
**Rhode Island-Hazardous Substance List:** Welding Fumes, Nickel, Chromium
**Texas-Hazardous Substance List:**
**West Virginia-Hazardous Substance List:**
**Wisconsin-Toxic and Hazardous Substances:**

## SECTION XVI- OTHER INFORMATION

Approval Date: 5-12-2018 NEW SDS Number: -Titanium -Wire & Rod
HMIS® ratings Health: 1 Flammability: 0 Physical hazard: 0
NFPA CODES: FIRE: 0 HEALTH: 1 REACTIVITY: 0


U.S. DOT = Material is not hazardous and is not considered as a dangerous item.
Washington Alloy Co. Believes that the information contained in this (SDS) Safety Data Sheet is accurate. However, Washington Alloy Co. does not express or implies any warranty with respect to this information.
Download the most current SDS and product information @ www.weldingwire.com

**More Data may be found @**

**American National Standard (ANSI) Z49.1** "Safety in Welding and Cutting", **ANSI/American Welding Society (AWS) F1.5** "Methods for Sampling and Analyzing Gases from Welding and Allied Processes", **ANSI/AWS F1.1** "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", **AWSF3.2M/F3.2** "Ventilation Guide for Weld Fume", American Welding Society, 550 North Le Jeune Road, Miami, Florida, 33135. Safety and Health Fact Sheets available from AWS at www.aws.org.
**OSHA Publication 2206 (29 C.F.R. 1910),** U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954.
**Threshold Limit Values and Biological Exposure Indices**, American Conference of Governmental Hygienists (ACGIH), 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.
**NFPA 51B** "Standard for Fire Prevention during Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.