



## MATERIAL SAFETY DATA SHEET

To comply with the Occupational Safety and Health Administration Hazard Communication Standard # 29 C.F.R. 1910.1200, as a distributor, Altemp Alloys LLC is required to furnish Material Safety Data Sheets for those products which are deemed hazardous. These primary metals, when improperly handled and improperly processed, have produced cancer in laboratory animals. In normal processing of specialty steels, there has been no indication of critical health hazards. This Material Safety Data Sheet also incorporates #40 CFR 372.45, Supplier Notification. Notification is hereby given that metal alloys received from Altemp Alloys LLC may contain toxic chemicals which are subject to the reporting requirements of SARA 313 of the Emergency Planning and Community Right-To-Know Act of 1986. See Section I for description of product, and Section III lists the chemicals as elements and CAS numbers. Care has been taken to provide current and accurate information within the MSDS, Altemp Alloys LLC extends no warranties, expressed or implied, makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage or injury of any kind which may result from or arise out of the use of or reliance on the information by any person. Responsibility for the compliance with federal, state, and local law regulations concerning the use of this product rests solely upon the purchaser.

### Section I- IDENTIFICATION

Solid metal products in the form of bar, sheet, plate, and pipe that are odorless and tasteless. Used in various applications including commercial, aerospace, space, and architectural industries. Alloy identification, or trade name, and percentage of each hazardous ingredient is disclosed on the certification packet accompanying each shipment.

### Section II – HAZARDS IDENTIFICATION

In the current state, as sold, does not constitute a health hazard, however material should be handled with care as ends and edges can be sharp. Welding, cutting, melting, grinding, or any processing that causes the release of dust or fumes, may institute some of the ingredients to change to a form which could affect exposed workers. In these instances it is recommended to refer to the original manufacturer, producing mill, or a physician, for information in regards to the symptoms and first aid necessary.

### Section III – COMPOSITION & INGREDIENTS

Element	CAS NO	Element	CAS No
Aluminum (Al)	7429-90-5	Cobalt (Co)	7440-48-4
Boron (B)	7440-42-8	Copper (Cu)	7440-50-8
Calcium (Ca)	7440-70-2	Iron (Fe)	7439-89-6
Carbon (C)	7440-44-0	Manganese (Mn)	7439-96-5
Chromium (Cr)	7440-47-3	Molybdenum (Mo)	7439-98-7
Nickel (Ni)	7440-02-0	Tantalum (Ta)	7440-25-7
Niobium (Nb)	7440-03-1	Titanium (Ti)	7440-32-6
Nitrogen (N)	7727-37-9	Tungsten (W)	7440-33-7
Selenium (Se)	7782-49-2	Vanadium (V)	7440-62-2
Silicon (Si)	7440-21-3	Yttrium Trioxide (Y2O3)	1314-36-9

### Section IV – FIRST AID MEASURES.

**Skin:** Wash skin with soap and water to remove any metallic particles. If a rash or burn develops, seek medical attention. **Eyes:** Flush particles from eyes with clean water for at least 15 minutes. If irritation persists or burn develops, seek medical attention. **Inhalation:** Remove from exposure. If respiratory irritation persists, seek medical attention. **Ingestion:** If metallic particles are swallowed, seek medical assistance. **Advice to physician:** Treat symptomatically.

### Section V – FIRE FIGHTING MEASURES.

Media Flash Point (Method Used): N/A. Unusual Fire and Explosive Hazards: N/A material is noncombustible.

### Section VI – ACCIDENTAL RELEASE MEASURES.

In solid form this material requires no special clean-up. If this material is released as a fume, powder, or dust, notify safety personnel, isolate the area, and deny entry. Do not blow or sweep, a vacuum system utilizing a high efficiency particulate air (HEPA) filtration system. Caution should be taken to minimize airborne generation of powder, fumes, or dust and avoid contamination of air and water. Cleanup personnel should protect against exposure, properly label all materials collected in waste container. Follow applicable emergency response regulations, such as OSHA (29CFR 1910.120).

### Section VII – HANDLING AND STORAGE.

Dust and welding fume should be moved or transported to minimize spill or release potential. In solid form, these materials pose no hazards.

### Section VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION.

**Ventilation Controls** - Local exhaust ventilation should be used to control exposure to airborne dust and fume emissions near the source (during welding, plasma arc cutting, sawing, grinding, etc.) below the exposure limits cited in each CAS NO. **Respiratory protection** - Use a fume or an air supplied respirator where local exhaust or general ventilation does not keep exposure below the exposure limits for air contamination. Use NIOSH approved respirators as specified by an industrial hygienist or qualified safety professional. Lung function tests are recommended for users of negative pressure devices. **Gloves** - Wear suitable protection while handling solid metal alloys in mill product forms to protect against physical injury. **Eye protection** - Wear safety glasses or goggles when there is a reasonable probability of flying particles or high levels of airborne dust. When welding these materials it is recommended to use a welding mask to prevent eye irritation. **PPE/other** during high heat or severe cold conditions appropriate clothing is to be used to ensure safety of oneself.

### Section IX – PHYSICAL AND CHEMICAL PROPERTIES.

Melting point: >2100°F. Vapor density (AIR=1): N/A. Sublimes @: N/A. Specific gravity: (H2O=1) 7- 9. Boiling point: N/A. pH: N/A. Evaporation rate: N/A. Solubility in water: None. Vapor pressure (mmHg): None. % Volatiles by pressure: None. Appearance and color: Dark grey/silver in basic mill form.

### Section X – STABILITY AND REACTIVITY.

**Stability** - Solid metal alloys in mill product forms are stable under normal conditions. **Reactivity** - May react in contact with strong acids to release gaseous acid decomposition products. Fume is produced during welding. Expected fume constituents include oxides of metal as iron, manganese, nickel and chromium. Expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Contamination, dirt, surface bar, sheet, plate and pipe. Odorless.

**Section XI – TOXICOLOGICAL INFORMATION.**

Nickel and cobalt are classified as Category 3 carcinogens. The exposure route of concern is inhalation. As shipped, these complex alloys in massive form have no known toxicological properties other than causing allergic reactions in individuals' sensitive to the metal(s) contained in the alloys. However, dust from flux or user-generated dusts and fumes may on contact with the skin or eyes produce mechanical irritation. Chronic exposures coupled with sweat could cause dermatitis (skin) or conjunctivitis (eyes). Excessive inhalation of dust or user-generated fumes from welding or metal spraying may, depending on the specific features of the process used, pose a long-term health hazard. The International Agency for Research on Cancer (IARC) has concluded that welding fumes are possibly carcinogenic to humans. The ingredients of fumes and gases generated in welding, metals spraying and grinding will depend on the base metal and the details of the specific process being used. Ingredients may include metals, metal oxides, chromates, fluorides, carbon monoxide, ozone, and oxides of nitrogen. **Delayed (Sub-Chronic and Chronic) Effects** - Chromium - The International Agency for Research on Cancer (IARC) considers hexavalent chromium to be a carcinogen (lung, nasal) but does not have adequate evidence for chromium metal and trivalent chromium. Fumes have been associated with lung fibrosis. Iron - Prolonged inhalation of iron oxide fumes can lead to siderosis, which presents as a benign pneumoconiosis. Molybdenum - Repeated inhalation of fumes has caused kidney damage, respiratory irritation and liver damage in animals. Nickel - Nickel metal is "reasonably anticipated to be a human carcinogen" (National Toxicology Program's 10th Report). IARC states that nickel metal is possibly carcinogenic to humans. Epidemiological studies of workers exposed to nickel powders, dusts and fumes in the nickel alloy and stainless steel producing industries do not indicate a significant respiratory cancer hazard. Inhalation of nickel powder produced malignant tumors in rodent studies. Single intratracheal installations of nickel powder at levels close to the LD50 have caused malignancies in hamsters. Nickel can cause skin sensitization in susceptible individuals through prolonged contact with skin.

**Section XII – ECOLOGICAL INFORMATION.**

Solid metal alloys in mill product forms products are not considered toxic to aquatic species. It is believed that finely divided product, based on its components, will be hazardous to fish, animals, plants and the environment if released, the degree of which would depend on the particle size and quantity released. In addition, if particles are small enough, material may be ingested by wildlife, with possible toxic effects. The solid product is not expected to migrate easily into soil or groundwater based upon its insoluble form, however, finely divided material can become mobile in water and contaminate soil and groundwater.

**Section XIII – DISPOSAL CONSIDERATIONS.**

As shipped products are solid waste and would not be classified as a hazardous and are typically collected to recover scrap metal values. Dust, fumes, grinding, cutting chips and other residues from the work area, or from filters, are to be disposed of in accordance with local, state and federal regulations.

**Section XIV – TRANSPORT INFORMATION.**

No international regulations or restrictions are applicable. Shipping name: N/A. Identification number (UN): See appendix. Hazard class: N/A. Label(s) required: N/A.

**Section XV – REGULATORY INFORMATION.**

Alloys containing less than 1% of nickel or cobalt are not classified as "dangerous for supply". Alloys containing more than 1% of either metal are classified as the metals themselves. However, in recognition of their essentially non-hazardous nature, these alloys in the massive form are not required to be labeled as hazardous.

**Section XVI – OTHER INFORMATION.**

Current Issue Date: May 2024. Previous Issue Date: Jan 2019 Changes: Revised sections 1-4, 6, 8, 10, 13, and 14. Previous Changes: Added 2507. Added 13-8 and Monel 400, Removed incorrect data on Crystalline Silica. This SDS was prepared by Altemp Alloys, LLC technical personnel to be in compliance with OSHA's Hazard Communication Standard, 29 CFR 1910.1200 and is provided in good faith based upon the experience and knowledge of the company. Altemp Alloys, LLC does not manufacture solid metal alloys, but causes products to be made under their label by internationally known and recognized producers. In addition, Altemp Alloys, LLC distributes products of these companies and has relied, in part, on information contained in SDS documents provided by these manufacturers. Users should make their own assessment of workplace risks as required by other health and safety legislation. As the conditions or methods of use are beyond our control, we do not assume any responsibility and expressly disclaim any liability for any material described herein. Information contained is believed to be true and accurate, but all statements or suggestions are made without warranty, expressed or implied, regarding accuracy of the information, the hazards connected with the use of the material or the results to be obtained from the use thereof. Compliance with all applicable Federal, State, and local laws and regulations remain the responsibility of the user.

**APPENDIX**

This listing of alloys is a representation of the common names, trade names, and UN numbers of the materials commonly supplied by Altemp Alloys, LLC.

**Titanium Alloys:** 6-4 UNS: R56400, 6-4 ELI UNS: R56401, 6-4 STA UNS: R564006-2-4-2 UNS: R54620, 10-2-3 UNS: R56410.

**Nickel Alloys:** 330® UNS: N08330, 333® UNS: N06333, 400 UNS: N04400, 600 UNS: N06600, 601 UNS: N06601, AL-6XN® UNS: N08367, 625 UNS: N06625, 718 UNS: N07718, 718 NACE UNS: N07718, X UNS: N06002, 230® UNS: N06230, W UNS: N10004, INVAR 36 UNS: K93600, K93603.

**Cobalt Alloys:** 188 UNS: R30188, L-605 UNS: R30605, René 41 UNS: N07041, Waspaloy UNS: N07001.

**Stainless Steels:** 310 UNS: S31008, S31009, 309 UNS: S30908, 321 UNS: S32100, 410 UNS: S41000, 410S UNS: S41008, 446 UNS: S44600, 317L UNS: S31703, 303\* UNS: S30300, 304/304H UNS: S30400, S30409, 304/304L\* UNS: S30400, S30403, 316/316L\* UNS: S31600, S31603, 17-4 UNS: S17400, 15-5 UNS: S15500, A-286 UNS: S66286, Zeron®100 S32760, 13-8 UNS: S13800 \*, 304/304L, 316/316L are also featured.