



SAFETY DATA SHEET (SDS)

In compliance with the OSHA Hazard Communication Standard (HCS) (29 CFR 1910.1200(g), we are communicating to our customers pertinent health and safety information by means of this SDS for the safe handling and use of materials supplied by Best Stainless & Alloys, LP. Best Stainless & Alloys is a distributor of products and does not manufacture any of the metals contained herein. The specific percentage of the components for each element can be obtained from the actual certificate of test (MTR) for a given metal. Steel products contain various constituents in the base metal of varying toxicity and concentration. This material Safety Data Sheet (SDS) provides information on a specific group of manufactured metal products. Since these metal products share a common physical nature and constituents, the data presented are applicable to all alloys identified.

Section I - PRODUCT IDENTIFICATION & COMPANY INFORMATION

Product name: Various metal grades encompass trade names and alloy designations to include stainless steel, nickel, cobalt and titanium alloys.

Product use: Refer to specific, applicable product technical data sheets for information of typical scope of use and application, not all products are suitable for all processes or applications.

Supplier/Distributor: Best Stainless & Alloys 11930 Proctor Rd. Houston, Tx. 77038

For more information, contact: 713-482-4000 sales@beststainless.com www.beststainless.com

Section II – HAZARDS IDENTIFICATION

Metal grades supplied are not normally considered hazardous as shipped. Ends and edges of bars and plate can be sharp and gloves should be worn when handling.

POTENTIAL HEALTH HAZARDS

Skin: Although not normally hazardous, some individuals can develop allergic skin reactions to nickel and other metallic ingredients. Ends and edges of bars and edges of plate may be sharp and can cause cuts.

Eyes: As shipped, product does not pose a hazard to the eyes, however ends and edges of bar and edges of plate are sharp and can cause cuts. Any user-generated metal shavings could be hazardous to eyes.

Inhalation: Not a likely route of entry. Metal ingestion can cause toxic effects.

Ingestion: Not a likely route of entry. Metal ingestion can cause toxic effects.

Section III - COMPOSITION / INGREDIENTS

IMPORTANT – This section lists hazardous ingredients in the as-shipped products

INGREDIENT LEGEND	Max Wt. %	PEL2	TLV3	CAS#4
Aluminum (Al)	6	15	10	7429-90-5
Chromium (Cr) (metal)	27	1	0.5	7440-47-3
Cobalt (Co)	1	0.1	0.02	7440-48-4
Copper (Cu)	35	1	1	7440-50-8
Iron (Fe)	99	10	5	7439-89-6
Manganese (Mn)	15	C5	0.2	7439-96-5
Molybdenum (Mo)	11	15	10	7439-98-7
Nickel (Ni)	70	1	1.5*	7440-02-0
Silicon	5	15(5*)	10	7440-21-3
Titanium (Ti)	<1	15(5*)	10	7440-32-7
Tungsten (W)	5	5(STEL-10)	5	7440-33-7
Vanadium (V)	5	C0.5	0.05	7440-62-2
Zinc (Zn)				7440-66-1

Others elements such as Phosphorus (P), Sulphur (S), Boron (B), Selenium (Se), Nitrogen (N), Tantalum (Ta), Lead (Pb), Tin (Sn), Zirconium (Zr), Cadmium (Cd) can be present as impurities and in any case in a percentage < 1%

1 - Composition of HAZARDOUS INGREDIENTS (as defined by OSHA – 29CFR1910.1200 and PA TITLE 34) – 1% or greater by weight, except 0.01% or greater for nickel and chromium.

2 - OSHA PEL Permissible Exposure Limits (mg/m3)



3 - TLV Threshold Limit Value (mg/m³), American Conference of Governmental Industrial Hygienist (ACGIH) Both PEL and TLV are 8 hour Time Weighted Averages (TWA), unless designated as C (ceiling limits)

4 - CAS Chemical Abstract Services Number

5 - Not an alloying element, >1% possibly present in some metals

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

In solid form, materials as-supplied are nonflammable and non-explosive.

Section VI – ACCIDENTAL RELEASE MEASURES

In solid form, materials as-supplied pose no special problems or clean-up requirements.

Section VII – HANDLING AND STORAGE

HANDLING PRECAUTIONS - In solid form, materials as-supplied pose no special precautions or problems.

STORAGE PRECAUTIONS - In solid form, materials as-supplied pose no special precautions or problems.

Section VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION

SKIN PROTECTION - Wear hand, head, and body protection which help to prevent injury from any loose metal debris. At a minimum, wear gloves and a protective face shield while cutting, grinding, etc.

EYE PROTECTION - Wear substantial eye (safety glasses, goggles) and face protection to prevent injury from any loose metal debris.

VENTILATION – None required.

ENGINEERING CONTROLS – None required.

Section IX – PHYSICAL AND CHEMICAL PROPERTIES

Refer to specific mill test reports of metal grades for all physical, chemical and mechanical properties

Section X – STABILITY AND REACTIVITY

General: Products as-supplied possess no specific stability and reactivity concerns/requirements.

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. 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, may pose a long-term health hazard.

DELAYED (SUBCHRONIC 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.

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

As a solid metal, products as-supplied are not considered toxic to aquatic species.

Section XIII – DISPOSAL CONSIDERATIONS

Unused metal and/or wastes are normally collected to recover metal values. Metal shavings from cutting, grinding, or other operations, should be removed from the work area, in accordance with local, state and federal regulations.

Section XIV – TRANSPORT INFORMATION

No international regulations or restrictions are applicable. SHIPPING NAME - Not Applicable IDENTIFICATION NUMBER - Not Applicable HAZARD CLASS - Not Applicable LABEL(S) REQUIRED - Not Applicable

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.

State Regulations: The product, **Stainless Steel** as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know: Contains regulated material in the following categories: Hazardous Substances: Chromium, Manganese, Molybdenum, Nickel and Silicon Environmental Hazards: Chromium, Manganese and Nickel Special Hazardous Substance: Chromium and Nickel

California Prop. 65: Contains elements known to the State of California to cause cancer or reproductive toxicity. This includes Chromium compounds and Nickel.

New Jersey: Contains regulated material in the following categories: Hazardous Substance: Chromium, Manganese, Molybdenum, Silicon and Nickel Environmental Hazards: Chromium, Manganese and Nickel Special Hazardous Substance: Chromium, Manganese and Silicon Minnesota: Chromium, Manganese, Molybdenum and Nickel

Massachusetts: Chromium, Manganese, Molybdenum, Silicon and Nickel

Section XVI – OTHER INFORMATION

Current Issue Date: January 2023

Previous Issue Date: Sept 2011

Changes: Format, also includes additional information

This SDS was prepared by Best Stainless & Alloys' quality personnel to be in compliance with OSHA's Hazard Communication Standard, 29 CFR 1910.1200(g) and is provided in good faith based upon the experience and knowledge of the company. Best Stainless & Alloys does not manufacture products. Best Stainless & Alloys is a distributor of products manufactured by other companies, and has relied, in part, on information contained in SDS documents provided by those 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 herein 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.