

MATERIAL DATA SAFETY SHEET

Specification Type: **Safety Data Iconel Steel**

I. INGREDIENTS

Material or Component	CAS Number	%Weight	Exposure Limits	
			OSHA PEL (mg/m2)	ACGIH TLV (mg/m2)
Base Metal				
Iron (Fe)	7439-89-6		10(Fe ₂ O ₂ Fume)	5.0(Fe ₂ O ₂ Fume)
Alloying Elements				
Carbon (C)	7440-44-0	0.1 Max	None Listed	None Listed
Manganese (Mn)	7439-96-5	1.0 Max	5.0 as Manganese	1.0 as Manganese
Phosphorous (P)	7723-14-0		0.1 as Phosphorous	0.1 as Phosphorous
Sulfur (s)	7704-34-9	0.015 Max	13 (Sulfur Dioxide)	5 (Sulfur Dioxide)
Silicon (Si)	7440-21-3	0.5 Max	None Listed	None Listed
Chromium (Cr)	7440-47-3	21.0 - 25.0	1.0 as Chromium	0.5 as Chromium
Nickel (Ni)	7440-02-0	58.0 – 63.0	1.0 as Nickel	1. as Nickel
Selenium (Se)	7782-49-2	0.0 - 0.35	0.2 as Selenium	0.2 as Selenium
Columbium (Cb)	7440-03-1			
Tantalum (Ta)	7440-25-7		5.0 as Tantalum	5.0 as Tantalum
Cooper (Cu)	7440-50-8	1.0 Max		
Molybdenum (Mo)	7439-98-7			
Aluminum (Al)	7429-90-5	1.0 – 1.7		
Titanium (Ti)	7440-32-6			

Note: The above listing is a summary of elements used to ally stainless steel. Various grades of stainless contain different combinations of these elements. Trace elements may also be present in minute quantities.

II. PHYSICAL DATA

Material is (ad Normal Conditions) <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Gas <input type="checkbox"/> Other		Appearance and Odor Gray-Black with metallic lustre - Odorless	
Acidity / Alkalinity Ph= NA	Melting Point 2700°F Boiling Point NA	Specific Gravity (H ₂ O=1) –Approx 8 Solubility in water (% by weight) – NA	Vapor Pressure (mm Hg at 20°C) NA

III. PERSONAL PROTECTIVE EQUIPMENT

Performance Protection NIOSH approved dust/mist/fume respirator should be used during welding or burning if OSHA PEL or TLV is exceeded	Hands, Arms and Body Use appropriate protective clothing such as welder’s aprons & gloves when welding or burning. Check local codes.
Eye and Face Safety glasses should always be worn when grinding or cutting;	Other conditions and Equipment AS required

face shields should be worn when welding or burning.

IV. EMERGENCY MEDICAL PROCEDURES

Inhalation: Remove to fresh air; If condition continues, consult physician.

Eye Contact: Immediately flush well with running water to remove particulate; get medical attention.

Skin Contact: If irritation develops, remove clothing and wash well with soap and water. If condition persists seek medical attention.

Ingestion: If significant amounts of metal are ingested, seek medical attention.

V. HEALTH / SAFETY INFORMATION

Steel products in the natural state do not present an inhalation, ingestion, or contact health hazard. However, operations such as welding, burning, sawing, brazing, grinding and possibly machining, which results in elevating the temperature of the product to or above its melting point or results in the generation of airborne particulates may present hazards.

The above operations should be performed in well ventilated areas. The major exposure hazard is inhalation.

Effects of overexposure:

Acute: Excessive inhalation of all metallic fumes and dusts may result in irritation of eyes, nose and throat. Also high concentrations of fumes and dusts of iron-oxide, manganese, copper & selenium may result in metal fume fever. Typical symptoms consist of a metallic taste in the mouth, dryness and irritation of the throat, chills and fever, and usually last from 12 to 48 hours.

Chronic: Chronic and prolonged inhalation of high concentrations of fumes or dust of the following elements may lead to the conditions listed opposite the element:

- Iron (iron-oxide): Pulmonary effects, siderosis.
- Chromium: Various forms of dermatitis, inflammation and/or ulceration of upper respiratory tract, and possibly cancer of nasal passages and lungs. Based on available information, there does not appear to be any evidence that exposure to welding fume induces human cancer.
- Nickel: Same as Chromium.
- Selenium: Nasal and bronchial irritation, gastro-intestinal.
- Copper: Pulmonary effects.
- Vanadium: No reported cases of exposure to vanadium.
- Cobalt: Inhalation of cobalt dust may cause an asthma-like disease with cough and dyspnea.
- Molybdenum: Pain in joints, hands and feet.

Occupational Exposure Limits

See section 1

FIRE AND EXPLOSION

Flash Point NA °F	Auto Ignition Temperature NA °F	Flammable Limits on Air Lower NA% Upper NA%	Extinguishing Limits NA
Fire and Explosion Hazards None		Extinguishing Method to be used NA	

REACTIVITY

Stability <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Unstable	Incompatibility (Materials to avoid) Reacts with strong acids to form hydrogen gas.
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Conditions to avoid

Non-ventilated areas when cutting, welding, burning or brazing; avoid generation of airborne dusts and fumes.

Hazardous Decompositions products

Metallic oxides

VI. ENVIROMENTAL

Special Precautions: Use good housekeeping practices to prevent accumulation of dust and to keep airborne dust to a minimum.

Waste Disposal Method

Dust, etc – follow federal, state and local regulations regarding disposal.

VII. ADDITIONAL INFORMATION**DISCLAIMER**

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For more information on GLT Products, please call toll-free at 800.874.1748 or online at www.gltproducts.com.

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