

# Material Safety Data Sheet

## *Titanium Retainer Wire™*

06/01/14  
Version 1.4.

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### Section 1.

#### MATERIAL IDENTIFICATION

##### Manufacturer:

***EC Certification Service GmbH***  
A-9300 St. Veit/Glan, Sandgasse 39a,  
Phone # +43(0)4212-60-94  
Fax # +43(0)4212-60-94-4

##### Product Grade/Name:

***Titanium Retainer Wire***  
**GR1 Ti**

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### Section 2.

#### HAZARDOUS INGREDIENTS

MATERIAL	CAS Number	% (RANGE)	ACGIH-TLV	OSHA-PEL
IRON (Oxide as fume)	13097-37-1	0-0.42	5.0 mg/m <sup>3</sup>	10.0 mg/m <sup>3</sup>
Aluminum (As dust/fume)	7429-90-5	0-8	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup>
Chromium	7440-47-3	0-11	0.5 mg/m <sup>3</sup>	1.0 mg/m <sup>3</sup> (Dust)
Niobium	7440-03-1	0-5	-	-
Titanium	13463-67-7	75	10 mg/m <sup>3</sup> (Dust)	15 mg/m <sup>3</sup> (Dust)
MANGANESE(E)	7439-96-5	1.0	5 mg/m <sup>3</sup> (Dust)	5 mg/m <sup>3</sup> (Dust)
Zirconium	744-67-7	0-4	5 mg/m <sup>3</sup> (Dust)	5 mg/m <sup>3</sup> (Dust)
Molybdenum	7439-98-7	0-12	10 mg/m <sup>3</sup> (Dust)	15 mg/m <sup>3</sup> (Dust)
SILICON CARBON PHOSPHORUS SULPHUR		< 1 EACH	15 mg/m <sup>3</sup> (Dust)	10 mg/m <sup>3</sup> (Dust)

### Section 3

#### HAZARD IDENTIFICATION

Specialty Titanium alloys are not considered hazardous in the form shipped (solid bars, billets wire, etc) however, processes involves grinding, melting, welding, cutting release dust and fume. Hazardous levels of this dust or fumes of the constituents of these alloys could be generated. Following is a list of potential health effects for all hazardous elements that are possibly contained in our alloys. Please refer to section 2 titled "hazardous ingredients" for a list of those specific elements contained in this particular alloy.

#### Health Effects

**Iron:** Known to have caused irritation of the eyes, nose and skin of excremental animals. It may have the same effect on humans.

**Chromium:** Ferrochrome alloys have been associated with lung changes in workers exposed to these alloys. There are reports of skin ulcers, usually on hand or a perforated nasal septum. Some insoluble chromium compounds are suspect carcinogens. *OSH (29 CFR 1910. 1200) lists chromium as a possible carcinogen.*

**Columbium (Niobium):** No reports of human intoxication.

**Titanium:** Generally considered a nuisance dusty category, chronic overexposure to titanium dioxide dust can potentially lead to chronic bronchitis.

**Aluminum:** Not generally regarded as serious industrial health hazard.

**Zirconium:** Studies of several zirconium compounds conclude that zirconium is an element of low toxicity. Prolonged skin contact with zirconium compounds may lead to lumps on the skin (granulomas).

**Vanadium:** Acts as an irritant to the conjunctivae and respiratory tract. May affect pulmonary involvement. Signs and symptoms of poisoning are pallor, greenish – black discoloration of the tongue, cough, conjunctivitis, pain in the chest, bronchitis, rales and rhonchi, bronchospasm, tremor of the fingers and arms and radiographic reticulation.

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### Section 4

#### FIRST AID MEASURES

Remove victim from exposure and obtain prompt medical attention. If victim is unconscious, administer oxygen. If breathing, resuscitate immediately.

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<b>Route of Entry</b>	<b>Emergency First Aid</b>
Inhalation	Proceed to fresh air, if condition persists; consult physician
Eye Contact	Flush with running water to remove particulates and get medical attention.
Skin Contact	Wash area with mild detergent and water
Ingestion	While ingestion of large enough quantities to cause health effects is unlikely, consult a physician if it occurs

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## **Section 5**

### **FIRE FIGHTING MEASURES**

Suitable Extinguishing Media: N/A

Unsuitable extinguishing media: N/A

Particular hazard: See section 3

Protective Equipment for fire fighters: N/A

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## **Section 6**

### **ACCIDENTAL RELEASE MEASURES**

Personal Precautions

Ventilation:

If your process causes a release of dust or fumes, use local and general exhaust ventilation to keep airborne concentrations of dust or fumes below TLV.

Respiratory Protection:

If your process causes a release of dust or fume in excess of the permissible exposure limit, use approved respirators for protection against airborne dust or fumes should be worn. Respirators should be used in accordance with 29CFR1910.134.

Protective Equipment:

Gloves and barrier creams may be necessary to prevent skin sensitization and dermatitis. If your process involves grinding or any other action that causes the release of dust or fumes, approved safety glasses or goggles should be worn.

Environmental Precautions: No hazard Cleaning Methods: N/A

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## **Section 7**

### **SAFE HANDLING AND STORAGE**

Handling: See section 6

Storage: Titanium and titanium alloy solids are not considered combustible in the form supplied. However, subsequent machining operation require the use of cutting fluids to reduce the temperature of waste material which might ignite without a coolant.

Storage Conditions: N/A

Other: This product contain or produces traces of chemical know to the state of California to potentially cause cancer and birth defects (or other reproductive harm) California health and safety code 25249.5 et seq.

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## **Section 8**

### **PHYSICAL AND CHEMICAL PROPERTIES**

Form: Wire

Physical State: Solid

Odor: Odorless

Change of State: liquid Melting Point: 1550°C to 1830°C

Boiling Point: HIGH

Auto-Ignition Temperature: N/A

Flash Point: N/A

Specific Gravity: (H, O=1) Approx. 5.0

Vapor Pressure 20 Degrees C: (mm Hg): NIL

Density (20 Degrees C): 7.5 – 8.5 specific gravity

pH Value (at 10g/H<sub>2</sub>O): N/A

Solubility in Water: Insoluble

Solubility in Organic Solvent: Insoluble

Viscosity (20Degrees C): solid

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## **Section 9**

### **STABILITY AND REACTIVITY**

Stable: Yes

Thermal Decomposition: None

Conditions to Avoid: None

Materials to Avoid: None

Hazardous Decomposition Products: Fumes and/or gases produced from welding

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## **Section 10**

### **DISPOSAL CONSIDERATION**

Product: N/A

Packaging: Recyclable polymer.

Waste Disposal Code: N/A

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## **Section 11**

### **REGULATORY INFORMATION**

Preparation as defined by the (German) Chemicals Act (dated 4/03/1990)

Labeling: N/A

Product Contains: N/A

Danger Symbol: N/A

R-Sentences R36/37/38: N/A

S-Sentences S26: N/A

S-Sentences S28: N/A

National Regulation: N/A

TA-Air: N/A

Water Pollution1: N/A

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## **Section 12**

### **OTHER INFORMATION**

NOTE: While the information and recommendations set forth on this data sheet are believed to be accurate as received from our suppliers. SAWBROS INDUSTRIES takes no warranty with respect thereto and disclaims all liability from SAWBROS thereon. User is responsible to determine suitability of material for a specific application.