

**SAFETY DATA SHEET**

**PRODUCTS RELATED TO THIS MSDS**  
EXCALIBUR MINI SCREW I30-0616 to I30-1018

**IDENTIFICATION OF THE MATERIAL**

Raw materials used are Titan alloy ASTM B 265 GR4

**CHEMICAL COMPOSITION**

1. UP to	5,5 – 6,75 % Al
2. Up to	3,5 – 4,5 % V
3. Up to	0,0125 % H
4. Balance	Ti

***Mechanical features:***

<b><i>R<sub>p(0,2)</sub></i></b>	<b><i>828MPa</i></b>
<b><i>R</i></b>	<b><i>895 MPa</i></b>
<b><i>A%</i></b>	<b><i>10%</i></b>

**PHYSICAL - CHEMICAL PROPERTIES AND FLAMMABILITY**

Appearance	Solid	Color	Silver-grey
Odor	Odorless	Safety Data	None
Ph-value	None		
<i>Change of status</i>			
Bowling point	n.a	Melting point	1400 – 1660 °C
Combustion rate	n.a.	Flammability	n.a.
Ignition temperature	n.a.	Auto-ignition temperature	n.a.
Comburent capability	n.a.	Explosion limit	n.a.
Vapor pressure	n.a	Density at 20°	4,5 – 8,1 g/cm <sup>3</sup>
<i>Solubility and scattering features</i>			
Soluble in water	Insoluble	Soluble in fat	Insoluble
Scattering coefficient	None		

**ORTHODONTIC MANUFACTURER SIA SRL**

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**REACTIVITY**

**Stability and reactivity:** stable and not reactive

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**HAZARDS IDENTIFICATION**

**Information on toxicity:** Specialty steel alloys are generally not considered hazardous in the form shipped (solid bars, billets wire, etc.), however, if your process involves grinding, melting, welding, cutting, or any other process that causes a release of dust or fume, hazardous levels of dust or fume of the constituents of these alloys could be generated. The following is a list of potential health effects for all hazardous elements that are possibly contained in our alloys, Please refer to section II titled “hazardous ingredients” for a list of those specific elements contained in this particular alloy.

Health Effects

**Iron oxide:** Has 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.

**Cobalt:** Fume or dust causes irritation of the nose and throat and may cause an allergic skin rash. Also has been reported to cause respiratory disease with symptoms ranging from cough and shortness of breath to permanent disability and death. The symptoms frequently go away when exposure has stopped, but sometimes the symptoms progress after exposure has ceased.

**Manganese:** Inhalation of manganese fume may cause “metal fume fever” with symptoms of chills, fever, nausea, cough, dry throat, weakness, muscle aches, and a sweet or metallic taste in the mouth. Prolonged or repeated exposure may affect the nervous system, with difficulty in walking and balancing, weakness or cramps in the legs. Hoarseness of the voice, trouble with memory or judgment, unstable emotions or unusual irritability. The respiratory system may also be affected by a pneumonia like illness with symptoms of coughing, fever, chills, body ache, chest pain and other common signs of pneumonia.

**Nickel:** Fumes are respiratory irritants and may cause respiratory disease, skin contact can also cause an allergic skin rash, nickel and its compounds have been reported to cause cancer of the lungs and sinuses.

According to the Directive 67/548/EEC all products with a minimum Nickel content of 1% are classified in the same way as suspect carcinogen (category 3) and irritating for skin. Products which these sheets refer to, have form of massive metal alloy, therefore nickel cannot develop as possible hazardous material. No toxic effects caused by the material in massive form or during the normal orthodontic practices have been noticed. A prolonged and frequent contact may cause skin irritation and other allergic reactions in subjects sensitive to nickel.