

**MATERIAL SAFETY DATA SHEET**  
IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION HAZARD COMMUNICATION STANDARD #29 C.F.R. 1910.1200

**SECTION I – PRODUCT DESCRIPTION**

**PRODUCT IDENTIFICATION – TITANIUM**  
**COMMON NAME / GRADE – TITANIUM C.P., TITANIUM 6AL-4V, ETC.**

**SECTION II – HAZARDOUS INGREDIENTS**

BASE METAL, ALLOYING ELEMENTS, METALLIC COATING	% COMPOSITION BY WEIGHT (a)	CAS #	ACGIH TLV (mg/m <sup>3</sup> ) (b)
<b>BASE METAL</b>			
TITANIUM	46-99	7440-32-6	10 (Total Dust)
<b>ALLOYING ELEMENTS</b>			
ALUMINIUM (Al)	0-6	7429-90-5	10
VANADIUM (V)	0-10	7440-62-2	10 (Total Dust)
IRON (Fe)	0-48	7439-89-6	5 (As Iron Oxide)
MOLYBDENUM (Mo)	0-6	7439-98-7	10 (insoluble compound)
TIN (Sn)	0-5	7440-31-5	2
ZIRCONIUM (Zr)	0-4	7440-67-7	5
MANGANESE (Mn)	0-5	7439-96-5	5 (As Dust-Ceiling)
TANTALUM (Ta)	<1	7440-25-7	5
<b>TITANIUM 6-2-2-2 + 5-2-2-4-4 + 3-8-6-4-4</b>			
CHROMIUM (Cr)	2-6	7440-47-3	.5
<b>TITANIUM 2.5 + 6-2-1-1</b>			
COPPER (Cu)	2-2.5	7440-50-8	1 (Dust and Mist)
<b>TITANIUM .3 - .8</b>			
NICKEL (Ni)	.8	7440-2-2	1

(a) % of alloying materials varies with grade of material – (b) 1965-1966 ACGIH threshold limit value.

**SECTION III – PHYSICAL DATA**

Material is (at normal conditions) – Solid	Appearance and Odor – Grey Metallic, Odorless
Melting Point (Base Metal) – 1560-1840 degrees C	Specific Gravity - none

**SECTION IV – FIRE AND EXPLOSION DATA**

Extinguishing media – Dry chemical powders, salt or inert gas – Do not use water or liquid explosion hazard could result  
Special fire fighting procedure – If ignitable waste is generated. Special precautions and firefighting procedures should be followed ; Keep work areas free of the waste, store wet and keep away from heat and open flame – maintain humidity above 50% to prevent an electrostatic build-up. No smoking in area, use non-sparkling metal equipment.

**SECTION V – HEALTH HAZARD DATA**

Steel products in the natural state do not represent an inhalation, ingestion, or contact hazard. However, operations such as burning, welding, sawing, brazing, and grinding may release fumes and/or dust, which may present health hazard.

**SECTION VI – REACTIVITY DATA**

Stability – Stable	Incompatibility (Material to avoid) - NA
HAZARDOUS DECOMPOSITION PRODUCTS: Metallic dust or fumes may be produced during welding, burning, grinding, and possibly machining. Refer to ANSI Z46.1	

**SECTION VII – SPILL, LEAK OR DISPOSAL PROCEDURE**

This product is a solid metal and has no potential for spillage or leakage; Material solids may be sold as scrape. Dusts should be disposed according to local, state, and federal regulations.

**SECTION VIII – SPECIAL PROTECTION INFORMATION**

**Local exhaust ventilation should be utilized when welding, burning, grinding, or machining, NIOSH/MSHA approved dust and fume respirator should be used to avoid excessive inhalation of particulates, when exposure exceeds TLV's. Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by the welding standards.**

*Our materials have not come in contact with Mercury, while at our facility.*