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TITANIUM INDUSTRIES

MATERIAL SAFETY DATA SHEET

I. PRODUCT INFORMATION

Issue Date: 4/1/93

This MSDS covers a family of products identified as:

**TITANIUM 6-4, TITANIUM 6-4 ELI
TITANIUM, 6 ALUMINUM, 4 VANADIUM ALLOY
(Grades 5, 5 ELI)**

TITANIUM INDUSTRIES, INC.

TI-SALES CENTRAL SERVICE CENTER
801 SIVERT DRIVE
WOOD DALE, IL. 60191 U.S.A.

Number

General Information	East	(201) 428-1900
	Central	(708) 860-2606
	West	(310) 802-2889

II. INGREDIENTS:

Ingredient Grades 5 & 5 ELI	CAS No. (2)	Nominal % by Weight	OSHA PEL mg/M ³ (1)	ACGIH TLV mg/M ³ (1)	LD ₅₀
TITANIUM	7440-32-6	Balance	Total Oxide Dust: 10 Respirable Oxide Dust: 5	Oxide Fume :10	NOT AVAILABLE
ALUMINUM	7429-90-5	5.5 to 6.75	Total Dust: 15 Respirable Dust: 5 Welding Fume: 5	Dust: 10 Welding Fume: 5	Not Established
VANADIUM	7440-62-2	3.5 to 4.5	Respirable Dust & Welding Fume: 0.05 as V ₂ O ₅	Respirable Dust & Welding Fume: 0.05 as V ₂ O ₅	10 mg/kg (oral /rat)

III. PHYSICAL DATA

Physical State: Solid	Specific Gravity: 4-5 gm/cc ³	Melting Point >1560 °C	Odor: odorless
Appearance: A gray-colored metal.		Vapor Pressure: Not Applicable	Flash Point: Not applicable

IV. FIRE OR EXPLOSION HAZARD:

In the forms as shipped, these alloys are non-combustible. If the user performs operations (such as oxygen free or under water grinding, polishing, or machining operations) that could possibly generate finely divided powders, small chips, turnings, etc. from these alloys, the resulting materials can be easily ignited with a spark or flame. **If ignited USE A CLASS "D" FIRE EXTINGUISHER, dry sand, dry graphite, or inert gas** to smother the fire. **DO NOT USE WATER ! DO NOT USE CO₂ EXTINGUISHERS!** These extinguishing agents may cause an explosion. For small fires, where practical, allow to burn out.

V. REACTIVITY DATA:

This material is non-reactive (stable) as shipped and under normal storage and handling conditions. Explosions have occurred with red fuming nitric acid. Avoid contact with mineral acids and oxidizing agents which in contact with these alloys may generate hydrogen and create an explosion hazard. Violent explosions can occur when water comes in contact with any hot metal. The alloys can react and burn in pure carbon dioxide and nitrogen atmospheres. **DO NOT** smoke near DRY metal (fine chips, turnings, sponge, and pieces finer than 48 mesh as they can be ignited by a match or cigarette butt.

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