

METALWERKS PMD INCORPORATED
MATERIAL SAFETY DATA SHEET

PRODUCT INFORMATION

This MSDS covers the majority of the Metalwerks products as listed below.

Metalwerks PMD, Inc.
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HAZARDOUS INGREDIENTS

<u>PRODUCT NAME</u>	<u>Ti</u>	<u>Zr</u>	<u>Mo</u>	<u>Sn</u>
TI BETA III	BAL	2-5%	8-12%	2-5%

MAY 16 2

PHYSICAL DATA

Physical State: Solid

Special Gravity: 4 - 8

Melting Point: 2900- 3300DEG F Odor: Odorless

Appearance: Metallic Silver

FIRE OR EXPLOSION HAZARD

Nonflammable, however if in fine powder form or fresh chip form can ignite or explode. In case of fire smother the fire with sand or alumina dust.

REACTIVITY DATA

This material is non-reactive (stable) as shipped.

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TOXICOLOGICAL PROPERTIES

As shipped, the metals have no known (unless ingested) toxicological properties other than causing allergic reactions in individuals sensitive to the metals. The hazards of ingestion, if any, are discussed below.

It is the end user's responsibility to assess and the product, intermediate or fugitive emissions arising out of the use of these alloys.

TITANIUM(TI)

Exposure limit⁽¹⁾ TLV NOT ESTABLISHED(Metal Dust) PEL:NOTESTABLISHED LD₅₀: not available

TITANIUM is not readily absorbed through the skin or the GI tract and only poorly through the lungs.

ZIRCONIUM(ZR)

CARCINOGEN: NO

SENSITIZER: NO

ACUTE EFFECTS FROM EXPOSURE : NONE

CHRONIC EFFECTS FROM EXPOSURE: NONE

REF: NIOSH/OHSHA OHS FOR CHEM HAZARDS OSHA 29CFR TABLE Z-1-A JAN 1989

MOLYBDENUM(MO)

Exposure limit⁽¹⁾ TWA 5.0 mg/m³SOLUBLE (Metal Dust & fume) TWA 15.0 mg/m³INSOLUBLE

EXPOSURE EFFECTS: LOW TOXICITY

CARCINOGENIC EFFECTS: NOT LISTED

INGESTION: SEEK MEDICAL ATTENTION, GIVE LARGE QUANTITIES OF WATER AND INDUCE VOMITING

TIN (Sn)

Exposure limit⁽¹⁾ TLV: 2mg/cu m PEL: 2 mg/cu m cas#7440-31-5

Inhalation to excessive amounts of oxide fumes or dust may cause an apparent benign pneumoconiosis called stannosis which is reported not to be disabling

PREVENTIVE MEASURES

Respiratory Protection

Respiratory protection is necessary when exposure limits for airborne contaminants are exceeded during welding with electrodes made of these metals. Use supplied air respirators in confined spaces. Use only NIOSH approved respirators in accordance with 29 CFR 1910.134

Ventilation

Use local exhaust when welding. Maintain exposure limits below allowable limits. Confined spaces require special attention to provisions of adequate ventilation and/or air-supplied respirator.

Eye Protection and Special Clothing

Protective equipment is required when welding. Wear gloves, face protection and flame retardant clothes when welding. Shield from heat and radiation. Use recommended shaded lens from the American Welding Society publication F2.2