



International Advanced Materials

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Material Data Safety Sheet

Quick Identifier: Titanium

I. PRODUCT IDENTIFICATION

Trade Name:	Titanium	Formula:	Ti
Synonyms:		Molecular Weight:	
CASE #:	7440—32-6		

II. HAZARDOUS INGREDIENTS

<u>Hazardous Components:</u>	<u>OSHA PEL:</u>	<u>ACGIH TLV:</u>	<u>Other Limits:</u>
Titanium	N/A	10 mg/m ³	N/A
Titanium Powder	15 mg/m ³ (total dust) 5 mg/m ³ (resp. dust)	10 mg/m ³	N/A
Sec. 302 (EHS):	No	Sec. 304 RQ: No	Sec. 313: No
HMIS Ratings (0-4) (Solid):	1	Flammability: 0	Reactivity: 0
Health			
Health Rating (Powder):	Health 1	Flammability: 4	Reactivity 1
HMIS Protective Equipment:	N/A		

III. PHYSICAL DATA

Boiling Point:	3,287 C	Melting Point:	1,668 C
Specific Gravity (H₂O=1):	4.507	Vapor Density (Air=1):	N/A
Vapor Pressure (mm Hg):	Essentially 0	Evaporation Rate:	N/A
% Volatiles by Volume:	0	Solubility in H₂O:	Insoluble

Appearance and Odor: Gray Metallic, Odorless

IV. FIRE AND EXPLOSION HAZARDS DATA

Flash Point/Method:	Not applicable
Explosive Limits:	LEL: N/A UEL: N/A
Extinguishing Media:	See Special Precautions
Special Fire Fighting Procedures:	See Special Precautions
Unusual Fire and Explosion Hazards:	This product does not burn; however, grinding or polishing this product in the absence of oxygen, such as under water, can result in a finely divided waste which is ignitable.

V. HEALTH HAZARD INFORMATION

Routes of Entry:	Inhalation, Skin and Eyes, Ingestion				
Target Organs:	Mucous membranes				
Carcinogenicity: NTP:	No	IARC Monographs:	No	OSHA Regulated:	No
LD50/LC50: No toxicity data recorded.					

Health Hazards (Acute and Chronic):

Inhalation:

Acute: Prolonged inhalation may cause mild irritation to the lungs and respiratory tract

Chronic: N/A

Ingestion:

Acute: Relatively non-toxic, poorly absorbed from the alimentary tract.

Chronic: N/A

Skin:

Acute: Skin contact with dust may cause physical abrasion

Chronic: N/A

Eye:

Acute: Eye contact with pure material has shown particulate irritation.

Chronic: N/A

Signs and Symptoms of Exposures:

Inhalation: N/A

Ingestion: N/A

Skin: Irritation of skin

Eye: Irritation of eyes.

Medical Conditions Generally N/A

Aggravated by Exposure:

EMERGENCY AND FIRST AID PROCEDURES:

INHALATION: If exposed to excessive levels of metal fumes, remove to fresh air; seek medical aid immediately.

INGESTION: Call poison control center. Seek medical attention.

SKIN: Wash thoroughly with soap and water. Remove and properly dispose or launder contaminated clothing before wearing it again. Clean material from shoes and equipment. Seek medical attention if symptoms persist.

EYE: Flush with water for at least 15 minutes

VI. REACTIVITY DATA

Stability:	Stable
Incompatibility (Material to avoid):	N/A
Hazardous Decomposition Products:	Metallic dust or fumes may be produced during welding, burning, grinding, and possibly machining. Refer to ANSI Z49.1
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	See Special Precautions

VII. SPECIAL PRECAUTIONS

If Ignitable waste is generated, special precautions and firefighting procedures should be followed:

- 1) Keep work areas free of the waste
 - 2) Store wet and keep away from heat and open flame – maintain humidity above 50% to prevent an electrostatic build-up
 - 3) No smoking in area
 - 4) Use non-sparking metal equipment.
 - 5) Extinguishing media: dry chemical powders, salts or inert gas. Do not use water or liquid: explosion hazard could result
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VIII. SPECIAL PROTECTION INFORMATION

Respiratory Protection:	NIOSH/MSHA – Approved dust and fume respirator should be used to avoid excessive inhalation on particulates when exposure exceeds TLV's.
Ventilation local exhaust	Should be used when welding, burning, sawing, brazing, grinding or machining.
Mechanical (General):	N/A
Protective Gloves:	N/A
Eye Protection:	Safety glasses or goggles
Other Protective Clothing or Equipment:	Should be utilized as required by the welding standards
Work/Hygienic/Maintenance Practices:	Normal hygienic practices.

IX. ADDITIONAL COMMENTS

Some of the chemicals listed herein are research or experimental substances which may be toxic, as defined by various governmental regulations. In accordance with Environmental Protection Agency regulations and the Toxic Substance Control Act (TSCA), these materials should only be handled by, or under the direct supervision of a "technically qualified individual", as defined in 40 CFR 710.2(aa).

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