



**MATERIAL SAFETY DATA SHEET**  
COMPLIES WITH 29 CFR 1910.1200.  
OSHA HAZARD COMMUNICATION RULE

**DATE OF LAST REVISION: 08-07-98**

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## CHEMICAL IDENTITY

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LABEL IDENTITY	<b>TANTALUM</b>
CHEMICAL NAME/SYNONYMS	<b>TANTALUM</b>
FORMULA	<b>Ta</b>
CHEMICAL FAMILY	<b>METAL</b>
HAZARDOUS INGREDIENTS	<b>TANTALUM</b>
%: <b>99.9</b> CAS: <b>7440-25-7</b> TLV: <b>5 mg/m3</b> OSHA/PEL: <b>5 mg/m3</b>	
	<b>OTHER: 10.0mg/m3 (STEL)</b>

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## PHYSICAL AND CHEMICAL PROPERTIES

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COLOR, FORM AND ODOR	<b>Grey to Black, odorless.</b>
BOILING POINT	<b>5425° C</b>
DENSITY (gm/cc)	<b>N/A</b>
VAPOR PRESSURE @ 20°	<b>0 @ 20° C</b>
% VOLATILE BY VOLUME (%)	<b>NA</b>
REACTION WITH WATER	<b>NA</b>
EVAPORATION RATE (H2O=1)	<b>NA</b>
SOLUBILITY IN WATER	<b>Insoluble</b>
MELTING POINT	<b>2996° C</b>

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## FIRE AND EXPLOSION HAZARD DATA

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FLASH POINT	<b>NA</b>
AUTOIGNITION TEMPERATURE (°C)	<b>NA</b>
FLAMMABILITY	<b>NA</b>
EXTINGUISHING MEDIA	<b>This material is noncombustible. Use appropriate extinguishing agent for surrounding fires.</b>
SPECIAL FIRE FIGHTING PROCEDURES	<b>To extinguish metal powder fire use dry sand, dry graphite or other class "D" extinguishing powder.</b>
UNUSUAL FIRE & EXPLOSION HAZARDS	<b>If material is reduced to powder form, caution must be used to prevent fire or explosion</b>



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### HEALTH HAZARD INFORMATION

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TOXICITY DATA                      imp-rat TDLO:                      3760mg/kg

HMIS RATING:

HEALTH: **3\***    FLAMMABILITY: **3**    REACTIVITY: **2**                      PERSONAL PROTECTION: **J**

ROUTES OF ENTRY

INHALATION:                      **Yes**  
SKIN:                                      **Yes**  
INGESTION:                              **Yes**

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CARCINOGENICITY: **None**    NTP: **No**    IARC MONOGRAPHS: **NO**    OSHA REGULATE: **NO**

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EMERGENCY FIRST AID PROCEDURES:

**No specific data available, however persons with impaired pulmonary function, airway diseases, asthma, emphysema, chronic bronchitis, etc. may incur further disability if excessive concentrations of dust or fume are inhaled. If prior damage or diseases of the neurologic (nervous), circulatory, hematologic (blood) or renal (kidney) systems has occurred, proper screening or examinations should be conducted on individuals who may be exposed to further risk if handling and use of Ta causes excessive exposure.**

HEALTH HAZARDS (ACUTE & CHRONIC)

**INHALATION:** May cause irritation to the lung and/or other mucous membranes; inhalation of metal dust, fume or powder may result from melting, gross handling, casting, welding, grinding, crushing or similar operations which generate airborne particulate during use of the material.

**SKIN:** May cause irritation and/or dermatitis; skin contact may cause in some sensitive individuals an allergic response if elements such as chrome and nickel are present.

**EYES:** May cause irritation or mechanical injury to the eye or surrounding tissue; airborne particulate is always a potential problem as well as inserting fingers into eye socket if the hand or clothing is contaminated.

**INGESTION:** Hand, clothing, food and drink contact with metal dust, fume or powder can cause ingestion of particulate during hand to mouth activities such as eating, drinking, smoking, nail biting, etc.



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**\*\*\*Tantalum metal is not reactive with body fluids and is generally not associated with adverse health effects to the lung or other organ systems; no adverse health effects have been experienced among exposed workers\*\*\***

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### REACTIVITY DATA

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STABILITY	<b>Stable</b>
CONDITIONS CONTRIBUTING TO UNSTABILITY	<b>NA</b>
INCOMPATIBILITY (MATERIALS TO AVOID)	<b>Reacts violently with fluorine, chlorine &amp; bromine trifluorides. Contact of metallic dust with strong oxidizers may cause fire/explosions</b>
HAZARDOUS DECOMPOSITION PRODUCTS	<b>NA</b>
HAZARDOUS POLYMERIZATION	<b>Will Not Occur</b>

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### SAFE HANDLING AND USE

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STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

**No specific information given.**

WASTE DISPOSAL METHOD:

**Dispose of in accordance with Local, State and Federal regulations.**

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### SPECIAL PROTECTIVE INFORMATION

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RESPIRATORY PROTECTION	<b>High efficiency particle respirator when Exposed to fine powdered forms.</b>
LOCAL EXHAUST	<b>Yes</b>
MECHANICAL (general)	<b>NA</b>
SPECIAL	<b>NA</b>
OTHER	<b>NA</b>
PROTECTIVE GLOVES	<b>Not normally required</b>
EYE PROTECTION	<b>Safety glasses</b>
OTHER PROTECTIVE EQUIPMENT	<b>Not normally required</b>

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### SPECIAL PRECAUTIONS

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PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

**Tantalum must be handled according to the size, shape & quantity of material involved. Solid metal may require use of hoists, cranes, etc. Powders should be moved**



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or transported to minimize spill or release potential.

**Store metal and metal powder in a dry area. Do not store adjacent to mineral acids. Fine metal powder should be kept away from flames & sources of ignition.**

TRANSPORTATION REQUIREMENTS	DOT CLASS:	<b>Not Classified</b>
	UN NUMBER:	<b>NC</b>
	IMCO CLASS:	<b>NC</b>
	OTHER:	---

PRECAUTIONARY LABELING	NONE
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THE ABOVE INFORMATION IS ACCURATE TO THE BEST OF OUR KNOWLEDGE. HOWEVER, SINCE DATA, SAFETY STANDARDS AND GOVERNMENT REGULATIONS ARE SUBJECT TO CHANGE THE CONDITIONS OF HANDLING AND USE, OR MISUSE ARE BEYOND OUR CONTROL, **ANGSTROM SCIENCES** MAKE NO WARRANTY, EITHER EXPRESSED OR IMPLIED, WITH RESPECT TO THE COMPLETENESS OR CONTINUING ACCURACY OF THE INFORMATION CONTAINED HEREIN AND DISCLAIMS ALL LIABILITY FOR THE RELIANCE THEREON. USER SHOULD SATISFY HIMSELF THAT HE HAS ALL CURRENT DATA RELEVANT TO HIS PARTICULAR USE.

NA= NOT APPLICABLE

ND= NO DATA FOUND