



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

DATE OF LAST REVISION: 05-21-99

CHEMICAL IDENTITY

LABEL IDENTITY	TANTALUM NITRIDE
CHEMICAL NAME/SYNONYMS	TANTALUM NITRIDE
FORMULA	TaN
CHEMICAL FAMILY	METAL NITRIDE
HAZARDOUS INGREDIENTS	
%: 100 CAS: 12033-62-4 TLV: 5 mg/m3 OSHA/PEL: 5 mg/m3	

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR	Bronze or black powder, odorless
BOILING POINT (°C)	ND
DENSITY (gm/cc)	16.3
VAPOR PRESSURE (mm Hg)	NA
% VOLATILE BY VOLUME (%)	NE or NA
REACTION WITH WATER	None
EVAPORATION RATE (H2O=1)	NA
SOLUBILITY IN WATER	Insoluble, soluble in nitric acid and HF
MELTING POINT	3310.0°C

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT	NE or NA
AUTOIGNITION TEMPERATURE (°C)	NA
FLAMMABILITY	Non-flammable
EXTINGUISHING MEDIA	Not applicable. Use suitable extinguishing media for surrounding materials and type of fire.
SPECIAL FIRE FIGHTING PROCEDURES contained	Firefighters must wear full face, self-breathing apparatus with full protection clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.
UNUSUAL FIRE & EXPLOSION HAZARDS	When heated to decomposition, tantalum nitride may emit toxic fumes of ammonia. Contact with moisture may evolve ammonia, which can form explosive mixtures with air.



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HEALTH HAZARD INFORMATION

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Pre-existing respiratory and skin disorders**

EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION:

Acute: **May cause irritation to the respiratory system, nose, throat and lungs and possible chemical burns to the mucous membranes.**

Chronic: **May cause lung edema, laryngeal and bronchial spasms and possibly death.**

INGESTION:

Acute: **May cause chemical burns to the mouth, throat and gastrointestinal tract.**

Chronic: **No chronic health effects recorded.**

DERMAL/EYE:

Acute: **May be corrosive and an irritant.**

Chronic: **May cause irreversible damage to tissues, such as the conjunctiva, lens and cornea.**

TARGET ORGANS: **May affect the respiratory system, skin and eyes.**

SKIN:

Acute: **May be corrosive and an irritant.**

Chronic: **May cause dermatitis.**

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

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **Administer 1-2 cups of water or milk and induce vomiting, seek medical attention. Never give anything by mouth to an unconscious person.**

INHALATION: **Remove victim to fresh air; keep warm and quiet; give oxygen if breathing is difficult and seek medical attention.**

SKIN CONTACT: **Remove contaminated clothing; brush material off skin; wash affected area with mild soap and water; seek medical attention if symptoms persist.**

EYE CONTACT: **Immediately flush eyes for at least 15 minutes with lukewarm water, lifting upper and lower eyelids. Seek medical attention if symptoms persist.**

REACTIVITY DATA

STABILITY	Stable
CONDITIONS CONTRIBUTING TO UNSTABILITY	None
INCOMPATIBILITY (MATERIALS TO AVOID)	Water, moisture and strong oxidizing agents
HAZARDOUS DECOMPOSITION PRODUCTS	Ammonia fumes.
HAZARDOUS POLYMERIZATION	Will Not Occur
CONDITIONS TO AVOID	None



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SAFE HANDLING AND USE

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

Wear self-contained breathing apparatus and full protective clothing. Isolate the area where the spill occurred and insure that proper ventilation is available and that water/moisture is kept out of the area. Vacuum up spill using a high efficiency unit and place in a container for proper disposal. Take care not to raise dust.

WASTE DISPOSAL METHOD:

Consult federal, state and local regulations for proper disposal.

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION

LOCAL EXHAUST

MECHANICAL (general)

SPECIAL

OTHER

PROTECTIVE GLOVES

EYE PROTECTION

OTHER PROTECTIVE EQUIPMENT

NIOSH approved dust-mist-fume respirator

Maintain below TLV

Not Recommended

Handle in a controlled atmosphere.

Handle in an inert gas.

Rubber gloves.

Safety glasses

Wear protective clothing to prevent contamination of skin and clothes.

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

Store in cool, dry area in tightly sealed container. Wash thoroughly after handling. Tantalum nitride may react in moist air. Handle and store in a controlled and inert gas such as argon.

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

NE= NOT ESTABLISHED