



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

DATE OF LAST REVISION: 05-22-96

CHEMICAL IDENTITY

LABEL IDENTITY
CHEMICAL NAME/SYNONYMS
FORMULA
CHEMICAL FAMILY
HAZARDOUS INGREDIENTS

TITANIUM NITRIDE
TITANIUM MONONITRIDE
TiN
METAL NITRIDE
TITANIUM NITRIDE

%: **100** CAS: **25583-20-4**

TLV: **10 mg/m3**
(as TiO2)

OSHA/PEL: **15 mg/m3**
(as TiO2)

PHYSICAL AND CHEMICAL PROPERTIES

COLOR, FORM AND ODOR
BOILING POINT
DENSITY (gm/cc)
VAPOR PRESSURE @ 20°
% VOLATILE BY VOLUME (%)
REACTION WITH WATER
EVAPORATION RATE (H2O=1)
SOLUBILITY IN WATER
MELTING POINT
OTHER

Gray/black powder/pcs. Slight ammonia odor
ND
5.22
NA
NA
None (may form ammonia gas)
NA
Insoluble
2980
Slightly soluble in hot aqua regia and HF

FIRE AND EXPLOSION HAZARD DATA

FLASH POINT
AUTOIGNITION TEMPERATURE (°C)
FLAMMABILITY
EXTINGUISHING MEDIA
SPECIAL FIRE FIGHTING PROCEDURES

UNUSUAL FIRE & EXPLOSION HAZARDS

NA
NA
Non-flammable
Use dry chemical, CO₂, DO NOT USE WATER
Wear a self-contained breathing apparatus
and full protective clothing to prevent contact
with skin and eyes.
Material may emit toxic fumes if involved in a
fire. Material may form flammable ammonia
gas on contact with water or moisture.

HEALTH HAZARD INFORMATION

TOXICITY DATA:

TiO2:

skn-hmn 30mg/3D-1 ihl-rat TCLO: 250mg/m3

ims-rat TDLO: 260mg/m3 ims-rat TD: 260mg/m3



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HEALTH HAZARD INFORMATION CONTINUED

HMIS RATING:

HEALTH: **2** FLAMMABILITY: **1** REACTIVITY: **2** PERSONAL PROTECTION: **J**

ROUTES OF ENTRY

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

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Respiratory and Skin Disorders**
EFFECTS OF OVEREXPOSURE (acute and chronic):

INHALATION: **A respiratory irritant. Coughing, sneezing, difficulty breathing and pulmonary edema possible. May cause irritation of mucous membranes of the nose and throat.**

DERMAL/EYE: **Dermal: Irritation. Redness, inflammation may occur. Dermatitis may occur.**

Eye: Irritation. Redness, watering, inflammation possible. Risk of serious injury.

OTHER: **This material is considered to be physiologically inert. There are no reported cases in the literature where titanium as such has caused intoxication. The dusts of titanium compounds such as titanium oxide may be placed in the nuisance category. When exposed to water or moisture ammonia may be evolved.**

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

EMERGENCY FIRST AID PROCEDURES: *(seek medical attention in all cases below)*

INGESTION: **Administer 1-2 cups of water or milk and induce vomiting.**

INHALATION: **Remove to fresh air & administer oxygen if breathing is difficult**

SKIN CONTACT: **Brush material off skin and wash affected area with soap and water**

EYE CONTACT: **Flush eyes for at least 15 minutes with lukewarm water**

REACTIVITY DATA

STABILITY

Stable

CONDITIONS CONTRIBUTING TO UNSTABILITY

Moisture/water

INCOMPATIBILITY (MATERIALS TO AVOID)

Strong acids, strong bases

HAZARDOUS DECOMPOSITION PRODUCTS

Ti, NH₃, TiO₂

HAZARDOUS POLYMERIZATION

Will Not Occur

CONDITIONS TO AVOID

Heat, water/moisture, incompatible materials



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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: **Dispose of in accordance with local, state & federal regulations**

SPECIAL PROTECTIVE INFORMATION

RESPIRATORY PROTECTION	NIOSH approved dust-mist-fume cartridge respirator
LOCAL EXHAUST	Maintain below TLV
MECHANICAL (general)	Recommended
SPECIAL	Handle in a dry, inert atmosphere.
OTHER	NA
PROTECTIVE GLOVES	Neoprene
EYE PROTECTION	Safety glasses
OTHER PROTECTIVE EQUIPMENT	Wear protective clothing to prevent contamination of skin and clothes.

SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING/STORAGE:

Store in tightly closed container, store away from heat and incompatible materials, wash hands and face thoroughly after handling and before meals.

TRANSPORTATION REQUIREMENTS	DOT CLASS:	Not Classified
	UN NUMBER:	NC
	IMCO CLASS:	NC
	OTHER:	SPC, Corrosive

PRECAUTIONARY LABELING **NONE**

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NA= NOT APPLICABLE

ND= NO DATA FOUND