

Material Safety Data Sheet

Identity: Vanadium Nitride

Formula: VN

SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and we assume no liability resulting from its use.

SECTION II - PRODUCT INFORMATION/HAZARDOUS INGREDIENTS

Chemical Family: Metal Nitride

CAS #24646-85-3

Hazardous Components	CAS #	OSHA PEL	ACGIH TLV	%
Vanadium Nitride	24646-85-3	0.05 mg/m ³ (as V)	0.05 mg/m ³ (as V ₂ O ₅)	100

SECTION III - PHYSICAL/ CHEMICAL CHARACTERISTICS

Boiling Point: ND

Specific Gravity (water=1): 6.166 @ 25deg. C

Melting Point: 2320°C

Vapor Pressure: NA

Physical States: Solid

Vapor Density: NA

Evaporation Rate: NA

Solubility in Water: Insoluble

% Volatile: NA

Appearance and Odor: Black crystalline powder.

Other Comments: Slightly soluble in aqua regia.

SECTION IV - FIRE AND EXPLOSION DATA

Flash Point: NAExtinguishing Media: Use dry chemical, graphite, and agents for metal fires.Special Fire Fighting Procedures:

Wear a self-contained breathing apparatus and full protective clothing to prevent contact with skin and eyes.

Unusual Fire and Explosion Hazards:

May evolve toxic fumes of V_xO_y and N_xO_y if involved in a fire.

Toxicity Data:

***No specific data on this compound ***

V2O5 data:

ihl-cat LCLO: 500 mg/m³/23M

hmn LCLO: 346 mg.m³

hmn LCLO: 1 mg/m³/8H

rat LCLO: 70 mg/m³/2H

rat LD50: 10 mg/kg

ipr-rat LD50: 12 mg/kg

ivn-rbt LDLO: 10 mg/kg ihl-

orl-mus LD50: 23 mg/kg ihl-

scu-gpg LDLO: 20 mg/kg ihl-

scu-mus LD50: 14 mg/kg orl-

scu-rbt LDLO: 20 mg/kg

itr-rat LDLO: 25 mg/kg

SECTION V - REACTIVITY DATA

Conditions to Avoid: Exposure to high temperature, incompatible materials.

Incompatibility: No data. Possibly incompatible with HF, halogens, oxidizers, and interhalogens.

Hazardous Decomposition or byproducts: V2O5, N_xO_y (heat).

Hazardous Polymerization: NA

SECTION VI - HEALTH HAZARD DATA

Routes of entry: Inhalation: Yes Skin - Yes Eyes - Yes Ingestion - Yes

Effects of Overexposure

Inhalation: Symptoms include pallor, paroxysmal cough, pain in chest, bronchitis, rales and rhonci, bronchospasm, radiographic reticulation, and tremors of the arms and fingers. Prolonged exposure leads to pulmonary involvement. Serious overexposure may lead to pulmonary edema and pneumonia.

Dermal Contact: Irritation, redness, and inflammation possible. May also cause eczematous type lesions and hives.

Eye: Irritant to conjunctivae. May cause burning sensation, watering, inflammation. Ingestion: Greenish tongue, metallic taste, tremors, pallor, and sore throat. Vanadium is an equivocal tumorigenic agent. Responses to vanadium exposure are acute, never chronic. Recent reports describe symptoms, which are generally restricted to the conjunctivae and respiratory tracts, with no evidence of disturbances of the G.I. tract, kidneys, blood or CNS.

Medical Conditions Generally Aggravated by Exposure: Respiratory and eye disorders.

Carcinogenicity: None. NTP: No IARC: No OSHA: Yes

Emergency and First Aid Procedures:

Ingestion: Give victim 1-2 glasses of milk or water and induce vomiting. Seek medical attention.

Inhalation: Remove victim to fresh air. Seek medical attention. Give oxygen if breathing is difficult.

Skin Contact: Brush material off skin. Wash affected area with soap and water. Seek medical attention.

Eye Contact: Flush eyes with lukewarm water for 15 minutes. Seek medical attention.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE.

Steps To Be Taken In Case Material Is Released or Spilled:

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

Disposal Method: Dispose of in accordance with local, state and federal regulations.

Hazard Label Information:

Store in tightly closed containers in a cool, dry place. Wash hands and face thoroughly after handling and before eating.

Other Precautions:

Wear protective clothing to prevent contamination of skin and clothes.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary - Hazard Label Information NIOSH

approved respirator Impervious gloves Safety glasses

Clothes to prevent skin contact

Respiratory Protection (Specify Type):

Wear NIOSH-approved dust-mist-fume cartridge respirator.

Protective Gloves: Neoprene

Eye/Face Protection: Safety glasses

Work/Hygienic/Maintenance Practices: 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.