



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

DATE OF LAST REVISION: 05/13/09

CHEMICAL IDENTITY

| | |
|-------------------------------------|---|
| LABEL IDENTITY | VANADIUM METAL |
| CHEMICAL NAME/SYNONYMS | VANADIUM METAL |
| FORMULA | V |
| CHEMICAL FAMILY | METAL |
| HAZARDOUS INGREDIENTS | VANADIUM METAL |
| %: 100 CAS: 7440-62-2 | TLV: 0.05MG/M3 OSHA/PEL: 0.5mg/m3 (ceiling) (for Vanadium dust and fumes as V2O5) |

PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--------------------------|--|
| COLOR, FORM AND ODOR | Light gray metallic powder, no odor |
| BOILING POINT | 3380 |
| DENSITY (gm/cc) | 5.96 |
| VAPOR PRESSURE @ 20° | NA |
| % VOLATILE BY VOLUME (%) | NA |
| REACTION WITH WATER | None |
| EVAPORATION RATE (H2O=1) | NA |
| SOLUBILITY IN WATER | Insoluble |
| MELTING POINT | NA |

FIRE AND EXPLOSION HAZARD DATA

| | |
|----------------------------------|---|
| FLASH POINT | NA |
| AUTOIGNITION TEMPERATURE (° C) | NA |
| FLAMMABILITY | Non-flammable |
| EXTINGUISHING MEDIA | Agents for metal fires (like G-1 powder, MET-L X, or TEC) |
| SPECIAL FIRE FIGHTING PROCEDURES | Wear a self-contained breathing apparatus and full protective clothing when fighting chemical fires. |
| UNUSUAL FIRE & EXPLOSION HAZARDS | Not considered a highly flammable powder. |

HEALTH HAZARD INFORMATION

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|-------------------|------------------------|----------------------|-------------------------------|
| TOXICITY DATA | No Data | | |
| HMIS RATING: | | | |
| HEALTH: 2* | FLAMMABILITY: 0 | REACTIVITY: 0 | PERSONAL PROTECTION: E |
| ROUTES OF ENTRY: | INHALATION: --- | SKIN: --- | INGESTION: --- |



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HEALTH HAZARD INFORMATION CONTINUED

MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE: **Respiratory Disorders**
EFFECTS OF OVEREXPOSURE (acute and chronic):
INHALATION: **Vanadium compounds may cause metallic taste, respiratory tract irritation, chest pain, sore throat and a green coating to the tongue upon inhalation. Severe overexposure may result in pulmonary edema and pneumonia. May also cause an asthma-like condition.**
DERMAL/EYE: **Moderate irritation to the skin, eye and mucous membranes. Skin contact may result in eczematous type lesions and generalized hives.**
OTHER: **Dusts may cause lacrimation and a burning sensation of the conjunctiva.**

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

EMERGENCY FIRST AID PROCEDURES:

INGESTION: **Administer 1-2 cups of water and induce vomiting, seek medical attention.**
INHALATION: **Remove to fresh air, seek medical attention.**
SKIN CONTACT: **Wash affected area with soap and water, seek medical attention**
EYE CONTACT: **Flush eyes for at least 15 minutes with lukewarm water, seek medical.**

REACTIVITY DATA

| | |
|--|-----------------------|
| STABILITY | Stable |
| CONDITIONS CONTRIBUTING TO UNSTABILITY | None |
| INCOMPATIBILITY (MATERIALS TO AVOID) | None |
| HAZARDOUS DECOMPOSITION PRODUCTS | V2O5 fume |
| HAZARDOUS POLYMERIZATION | Will Not Occur |
| CONDITIONS TO AVOID | None |

SAFE HANDLING AND USE

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: **Vacuum equipped with HEPA filter.**

WASTE DISPOSAL METHOD: **Dispose of with normal refuse.**



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SPECIAL PROTECTIVE INFORMATION

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|----------------------------|--|
| RESPIRATORY PROTECTION | Half mask air purifying respirator for dusts or fumes. |
| LOCAL EXHAUST | Maintain below TLV |
| MECHANICAL (general) | Not desirable |
| 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: | --- |
| PRECAUTIONARY LABELING | NONE | |

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NA= NOT APPLICABLE

ND= NO DATA FOUND