

15117 Washington Highway  
P. O. Box 1055 Ashland VA

Phone: (804) 227-3381  
Fax: (804) 227-3404

CHEMTREC: (800) 424-9300  
Poison Center: (800) 562-8236

## Safety Data Sheet

### Section 1: Product and Company Information

Product Name: Vanadium  
Company: Fine Metals Corporation  
15117 Washington Hwy  
Ashland, VA 23005

For more information call: 1-804-227-3381  
(Monday - Friday 9-4:30)

**In case of emergency: Transportation (Chemtrec) 1-800-424-9300**  
**Poison Center: 1-800-562-8236**  
(24 hours/day, 7 days/week)

### Section 2: HAZARD IDENTIFICATION

**This material is not considered hazardous and is not classified under GHS**

#### Emergency Overview

Emergency Negligible fire or explosion hazard in bulk form. Powdered material may form explosive dust-air mixtures.

Hazard Statements: None.

#### Precautionary Statements:

Prevention: None.

Response: None.

#### Appearance/Form:

Form: Solid

Color: Silver grey metal

Odor: None

Hazard Summary: The solid metal will not burn. As with other dust, finely divided vanadium dispersed in air can explode. Hot or burning metal can produce toxic fumes.

#### Acute Health Effects

Skin: May cause skin irritation.

Eyes: May cause mechanical irritation

Ingestion: Low level of ingestion risk as sold. If large amounts are ingested may cause gastrointestinal distress.

Inhalation: Material is not likely to be hazardous by inhalation. If exposed to excessive levels of dust or fumes, remove to fresh air and get medical attention if cough or other symptoms develop.

**Chronic Exposure:** Metallic vanadium is considered nontoxic. However, vanadium compounds are toxic. Finely-divided vanadium is reactive enough to convert slowly to oxide compounds, making consideration of their toxic effects necessary. Chronic effects from exposure to vanadium oxide compounds: Chronic bronchitis, allergic skin reaction, chronic obstruction pulmonary disease.

**Aggravated Medical Conditions:** May aggravate pulmonary conditions.

#### Carcinogenicity:

No known effect.

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## Section 3: Composition/Information on Ingredients

| Chemical Name | CAS-No.   |               | Reach #       |         |
|---------------|-----------|---------------|---------------|---------|
| Vanadium      | 7440-62-2 | Not available | Not available | >99 wt% |

## Section 4: FIRST AID MEASURES

Eye Contact: Flush eyes immediately with large amounts of water; if irritation persists, get medical attention.

Skin Contact: Wash affected areas with soap or mild detergent; remove clothing if necessary. If irritation is present after washing, get medical attention.

Inhalation: Remove to fresh air, give oxygen if breathing is difficult. Perform CPR as necessary, treat for shock, get immediate medical attention.

Ingestion: Get immediate medical attention.

## Section 5: FIRE FIGHTING MEASURES

**Suitable extinguishing Media:** Dry table salt or type D fire extinguisher, dolomite, dry sand, graphite or soda ash.

**Unsuitable extinguishing media:** Water

**Specific hazards during firefighting:** Dusts at sufficient concentrations can form explosive mixtures in air. May form toxic metal fumes in fire.

**Special protective equipment for firefighters:** As in any fire, wear self contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

## Section 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Avoid formation of dust. Practice good chemical hygiene. Avoid breathing (dust, vapor, mist, gas).

**Environmental Precautions:** Do not release to the environment.

**Methods for Cleaning Up:** Remove all sources of ignition. Ventilate the area of the spill or leak. Wear appropriate personal protective equipment. Collect the spilled material and transfer to a clean, dry metal covered container for recovery or disposal.

## Section 7: HANDLING AND STORAGE

**Handling:** Keep material dry. If machining chips or residues have developed a green-black oxide surface film, this oxide should be carefully removed by pickling before further handling or processing of the metal. Cleanliness and good housekeeping are important to minimize oxide dust levels. Eating and smoking should not be permitted in areas where vanadium dusts are present. Wash hands thoroughly before eating, smoking or using toilet facilities. Practice good chemical hygiene.

**Storage:** Store in tightly closed containers. Store in cool, dry, well-ventilated area away from heat, sparks or flame. Protect from physical damage. Store away from incompatible materials.

## Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

**Engineering Controls:** Use process enclosures, local exhaust ventilation or other means to maintain employee exposure as far below limits as possible

### Component Exposure Limits

| Component | Location        | Value |
|-----------|-----------------|-------|
| Vanadium  | Not established |       |

**Engineering Controls:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

**Respiratory Protection:** Not normally needed. If ventilation is inadequate and this material is handled at elevated temperatures or dust/fumes/mists are generated a NIOSH/MSHA approved air purifying respirator with a manufacturers approved cartridge or canister may be permissible under certain circumstances.

**Eye/Face:** Wear safety glasses or goggles as appropriate to the task performed.

**Skin Protection:** As metallic vanadium, none required except as protection from sharp edges. As vanadium pentoxide: impervious clothing, gloves, face shields. Avoid dust contamination of clothing.

**Work Hygienic Practices:** Practice good chemical hygiene.

**Comments:** None

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Vanadium  
4/27/2015 2:30:26 PM

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**Physical State:** Solid

**Odor:** None

**Color:** Silver/grey

**Melting Point:** 1890° - 1910° C

**Boiling Point:** 3380° - 3407° C

**Vapor Pressure:** 0 @ 100° C

**Vapor Density (air = 1):** N/A

**Evaporation Rate:** N/A

**Solubility In Water:** Insoluble

**Specific Gravity (water = 1):** 5.96

**Atomic Weight:** 50.94

**% Volatility By Volume:** Vanadium will react violently with chlorine above 1800° C and is readily dissolved by nitric acid and slowly oxidizes if the surface is moist.

**Density:** 5.96

## **Section 10: STABILITY AND REACTIVITY**

**Stability:** Stable under normal conditions and usage.

**Incompatible Materials:** Vanadium should be kept away from oxidizers. Vanadium will react violently with chlorine above 1800° C and is readily dissolved by nitric acid and slowly oxidizes if the surface is moist.

**Hazardous Decomposition Products:** Toxic metal fumes

**Possibility of Hazardous Reactions:** Vanadium will react violently with chlorine above 1800° C and is readily dissolved by nitric acid and slowly oxidizes if the surface is moist.

## **Section 11: TOXICOLOGICAL INFORMATION**

**Acute Toxicity:** Metallic vanadium is considered nontoxic. However, vanadium compounds can be toxic. Finely-divided vanadium is reactive enough to convert slowly to oxide compounds, making consideration of their toxic effects necessary.

**Chronic Toxicity:** Not available

**Reproductive Toxicity:** Not available

**Mutagenicity:** No known effect.

**Carcinogenicity:** Not listed

**Other:** None

## **Section 12: ECOLOGICAL INFORMATION**

**Ecotoxicity:** Not available

**Persistence/Degradability:** Not available

**Bioaccumulation/Accumulation:** Not available

**Mobility in Environment:** Not available

## **Section 13: DISPOSAL CONSIDERATIONS**

**Waste Classification:** Recycling is disposal method of choice.

All disposal activities must comply with federal, state, provincial and local regulations.

## **Section 14: TRANSPORT INFORMATION**

**US DOT (ground):** Not regulated.

**ICAO/IATA (air):** Not regulated.

**IMO/IMDG (water):** Not regulated.

**Special Provisions:** None

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## Section 15: REGULATORY INFORMATION

### UNITED STATES

SARA Title III (Superfund Amendments and Reauthorization Act) 313 Reportable Ingredients: No

TSCA (Toxic Substance Control Act) status: Not regulated.

### STATE REGULATIONS

The following components appear in one or more of the following states hazardous substances

| Component | CAS #     | CA | MA  | MN | NJ  |    |
|-----------|-----------|----|-----|----|-----|----|
| Vanadium  | 7440-62-2 | No | Yes | No | Yes | No |

**California Proposition 65:** This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.

### CANADA

**WHMIS (Workplace Hazardous Materials Information System):** Not regulated.

**Domestic Substance List (Inventory):** All components of this product are included in inventory, exempt or notified

### GENERAL COMMENTS

None

## Section 16: OTHER INFORMATION

Information Contact: [sds@finemetalscorp.com](mailto:sds@finemetalscorp.com)

Issue Date: 7/4/1999

Revision Date: 1/1/2015

| HMIS®(II)     |   | NFPA |   |
|---------------|---|------|---|
| Health:       | 0 |      |   |
| Flammability: | 0 | 0    |   |
| Reactivity:   | 0 | 0    | 0 |
| PPE:          | B |      |   |

Ratings range from 0 (no hazard) to 4 (severe hazard)

The information contained in this SDS is believed to be correct, but is not all inclusive and shall be used only as a guide. Fine Metals Corporation shall not be liable for any damage resulting from handling or from contact with the product listed in the SDS. Any comments or questions should be directed to:

Safety Manager  
Fine Metals Corporation  
15117 Washington Highway  
P O Box 1055  
Ashland VA 23005  
(804) 227-3381