

# MATERIAL SAFETY DATA SHEET



Complies with U.S. OSHA  
E.C. Guideline 91/155/EEC:  
Revision: 6  
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**EMERGENCY TELEPHONE NUMBERS:**  
NATIONAL RESPONSE CENTER: 1-800-424-8802  
CHEMTREC U.S. and CANADA: 1-800-424-9300  
CHEMTREC International: 1-202-483-7616 (Collect)

Users of this product are requested to study this data sheet to learn the product's characteristics so that the product can be used safely. If the material is resold, the purchaser should be furnished a copy of this data sheet and the information should be made available to all users.

## SECTION 1

### Chemical Product and Company Identification

<b>Product Trade Name</b>	<b>Vanadium Trioxide (MVO)</b>
<b>Article No.</b>	MC9, MC10, MC11, MC12
<b>Company Identification</b>	Stratcor, Inc. Tel.: (501) 262-1270 4285 Malvern Road Fax: (501) 262-2793 Hot Springs, Arkansas 71901; USA
<b>Inquiry Department</b>	Stratcor, Inc.; Pittsburgh, PA; USA Tel.: 1-412-787-4500; www.stratcor.com

## SECTION 2

### Composition and Information on Ingredients

<b>Chemical Characterization:</b>	
<b>Chemical Description</b>	<b>Vanadium Trioxide, V<sub>2</sub>O<sub>3</sub></b>
<b>UN Number</b>	<b>None listed.</b>
<b>DOT Guide</b>	<b>154</b>
<b>CAS No.</b>	<b>1314-34-7</b>
<b>EINECS No.</b>	<b>215-230-9</b> divanadium trioxide

This substance contains only vanadium trioxide with trace impurities.

## SECTION 3

### Hazards Identification

<b>Potential Hazards for Humans and Animals:</b>	
<b>Eye Contact</b>	Irritation with possible corneal injury.
<b>Skin Contact</b>	Irritation with reddening and itching. Absorption of harmful amounts possible.
<b>Inhalation</b>	Irritation of the respiratory tract, chest tightness, wheezing, and coughing.
<b>Ingestion</b>	Abdominal discomfort, nausea, vomiting, cramping. Harmless green tongue discoloration.

## SECTION 4

### First-Aid Measures

<b>General Information:</b>	
<b>Inhalation</b>	Leave dusty area. Breathing assistance if necessary.
<b>Skin</b>	Wash with soap and water. See a physician if irritation continues.
<b>Eyes</b>	Flush with water 15 minutes to remove particles. See an ophthalmologist.
<b>Ingestion</b>	Give two glasses of water. Induce vomiting if conscious. Call a physician.

## SECTION 5 Fire-Fighting Measures

<b>Suitable Extinguishing Media</b>	Not flammable. Use media suitable for surrounding fire.
<b>Extinguishing Media Not to Be Used</b>	None.
<b>Special Exposure Hazards</b>	Avoid creating dust. May oxidize to vanadium pentoxide under fire-fighting conditions.
<b>Special Protective Equipment for Fire Fighters</b>	Full protective equipment including positive pressure-breathing apparatus. (See DOT Guide 154.)

## SECTION 6 Accidental- Release Measures

<b>Personal Precautions</b>	Skin, eye, and respiratory protection.
<b>Environmental Precautions</b>	Prevent entering sewage systems or surface water.
<b>Cleaning Methods</b>	Vacuum preferred – or sweeping. Addition of sand or sweeping compound is advisable.
<b>Additional Information</b>	Avoid decontamination procedures which create airborne dusting. Use ventilation if necessary to control dusting.

## SECTION 7 Handling and Storage

<b>Handling</b>	Vacuum dust at point of formation. Provide proper protective gear for handling dusty materials. Personnel should clean up after handling. Avoid areas where dust is present. Reacts slowly with moisture to form vanadium pentoxide.
<b>Storage</b>	Keep dry and in closed containers.

## SECTION 8 Exposure Controls and Personal Protection

<b>Recommendations on Equipment Designs</b>	Proper dust collection. Minimize dust during dumping operations.
<b>Occupational Exposure Limit</b>	$V_2O_3$ not specifically listed. 0.05 mg/m <sup>3</sup> for $V_2O_5$ inhalable particulate matter, measured as vanadium (ACGIH TLV TWA) 0.5 mgV/m <sup>3</sup> for $V_2O_5$ dust (MSHA TWA) 0.05 mg V/m <sup>3</sup> /15 min. for vanadium compounds (NIOSH REL CL)
<b>Personal Safety Equipment: Respiratory Protection</b>	Use respirators approved by NIOSH/MSHA in dusty areas.
<b>Hand Protection</b>	Use protective gloves and barrier creams.
<b>Eye Protection</b>	Use goggles or safety glasses with side shields.
<b>Skin Protection</b>	Avoid contamination of work clothing.
<b>Personal Hygiene</b>	Wash or bathe with soap and water after handling and before eating, drinking, or smoking.

## SECTION 9

### Physical and Chemical Properties

This MSDS reflects available research data and is not a product- or quality-specification document.

<b>Appearance:</b>	
<b>Physical State</b>	Solid.
<b>Form</b>	Granules.
<b>Color</b>	Black. (See Section 10.)
<b>Odor</b>	None.
<b>Change in Physical State:</b>	
<b>Melting Point</b>	1970°C (3578°F).
<b>Boiling Point</b>	Not available.
<b>Vapor Pressure</b>	Essentially zero.
<b>Flash Point</b>	Not applicable.
<b>Flammability</b>	Not applicable.
<b>Ignition Temperature</b>	Not applicable.
<b>Auto Flammability</b>	Not applicable.
<b>Oxidizing Properties</b>	May act as a catalyst in certain chemical environments.
<b>Explosive Properties</b>	None.
<b>Bulk Density</b>	1.1 to 1.2 g/cm <sup>3</sup> (70 to 75 lb./ft <sup>3</sup> )
<b>Solubility in Water (20°C)</b>	Slightly soluble.
<b>pH Value</b>	Not applicable.

## SECTION 10

### Stability and Reactivity

<b>Conditions to Avoid</b>	Situations which cause dusting.
<b>Incompatible Materials</b>	Aluminum powder, moisture.
<b>Hazardous Decomposition</b>	None. Reacts slowly with air to form V <sub>2</sub> O <sub>4</sub> (blue). Reacts with moisture to form V <sub>6</sub> O <sub>13</sub> (green). Reacts slowly at 120°C to form V <sub>2</sub> O <sub>5</sub> (yellow).

## SECTION 11

### Toxicological Information

<b>Acute Toxicity</b>	Not listed as toxic.
<b>Irritation</b>	Respiratory and skin irritant. May cause asthmatic reaction or allergic skin reaction in susceptible individuals.
<b>Chronic Toxicity</b>	Repeated overexposure may cause chronic bronchitis, allergic skin reaction, or asthmatic reaction with possible lung injury in susceptible individuals. When exposure ceases, effects are usually reversible.
<b>Carcinogen Status:</b>	
<b>IARC</b>	Not listed, International Agency for Research on Cancer
<b>NTP Annual Report</b>	Not listed, National Toxicology Program
<b>OSHA Subpart Z</b>	Not listed.
<b>U.S. EPA Genetic Toxicity</b>	Reported, Genetic Toxicology Program
<b>Mutagen Status</b>	Not listed.
<b>Teratogen Status</b>	Not listed.

## SECTION 12

### Ecological Information

<b>Persistence and Degradability</b>	Does not readily deteriorate in the environment. Reacts slowly with moisture to form vanadium pentoxide. (See Section 10.)
<b>Aquatic Toxicity and Other Data Relating to Ecotoxicity</b>	Not located. This substance is slightly soluble in water.

## SECTION 13 Disposal Considerations

### Product Recommendation

This material has no characteristics that may cause it to be listed as a hazardous waste under 40 CFR 261.

### Empty-Container Recommendation

Dispose of in accordance with applicable guidelines. Unused product may be returned to supplier for recycling.

## SECTION 14 Transport Information

### Shipping Description

VANOX™ Vanadium Trioxide.

### Labeling

No hazardous labels required.

### Placarding

No hazardous placards required.

### Transport

Not regulated by U.S. DOT, IMDG, or IATA.

### Packaging

Vanox™ vanadium trioxide is not regulated under U.N. packaging requirements.

**Note:** Vanadium trioxide is listed in the Emergency Response Guide Book for first responders during the initial phase of a Dangerous Goods / Hazardous Materials Incident. Guide No. 154, ID No. 2860. Vanadium trioxide is not regulated or transported as a Hazardous Material.

## SECTION 15 Regulatory Information

### Classification According to U.N. Guidelines

Not listed.

### E.C. Danger Symbol R-Phrases S-Phrases

Not listed.

Not listed.

### TSCA Inventory

Reported in the initial EPA TSCA Inventory.

### CERCLA RQ – 40 CFR 302.4(a)

Not listed.

### SARA 302 Components – 40 CFR 355, Appendix A

EHS – Not listed.

TPQ – Not listed.

### Section 311/12 Hazard Class - 40 CFR 370.2

Acute: No. Chronic: No. Fire: No. Pressure: No.  
Reactivity: No. Review appropriate regulations for possible Tier II requirements.

### Section 313 – 40 CFR 372.65

Reportable chemical categories: vanadium and vanadium compounds.

### Non-U.S. Requirements

Refer to specific national guidelines.

## SECTION 16 Other Information

### Data Sheet Prepared by:



8-10-09

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Director of Technology; Hot Springs, Arkansas; U.S.A.

Strategic Minerals Corporation believes that the data on this sheet are correct as of the effective date and that the opinions given reflect those of qualified experts. Since Strategic Minerals cannot control the product or its use, it is the user's responsibility to use the product safely. The data on this sheet apply only to products sold by corporate subsidiaries of Strategic Minerals and may not apply to products sold by others.

## STRATCOR, Inc.

A Subsidiary of Strategic Minerals Corporation; Part of the Evraz Group  
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