

MATERIAL SAFETY DATA SHEET



Complies with U.S. OSHA
E.C. Guideline 91/155/EEC:
Revision: 5
Last Revision: July 2004
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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

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

SECTION 2

Composition and Information on Ingredients

Chemical Characterization:	
Chemical Description	Vanadium Trioxide, V₂O₃
UN Number	None listed.
DOT Guide	154
CAS No.	1314-34-7
EINECS No.	215-230-9 divanadium trioxide

This substance contains only vanadium trioxide with trace impurities.

SECTION 3

Hazards Identification

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

SECTION 4

First-Aid Measures

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

SECTION 5 Fire-Fighting Measures

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

SECTION 6 Accidental- Release Measures

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

SECTION 7 Handling and Storage

Handling	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.
Storage	Keep dry and in closed containers.

SECTION 8 Exposure Controls and Personal Protection

Recommendations on Equipment Designs	Proper dust collection. Minimize dust during dumping operations.
Occupational Exposure Limit	V ₂ O ₃ not specifically listed. 0.05 mg/m ³ for V ₂ O ₅ respirable dust or fume (ACGIH TLV TWA) 0.5 mgV/m ³ for V ₂ O ₅ dust (MSHA TWA) 0.05 mg V/m ³ /15 min. for vanadium compounds (NIOSH REL CL)
Personal Safety Equipment:	
Respiratory Protection	Use respirators approved by NIOSH/MSHA in dusty areas.
Hand Protection	Use protective gloves and barrier creams.
Eye Protection	Use goggles or safety glasses with side shields.
Skin Protection	Avoid contamination of work clothing.
Personal Hygiene	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.

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

SECTION 10

Stability and Reactivity

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

SECTION 11

Toxicological Information

Acute Toxicity	Not listed as toxic.
Irritation	Respiratory and skin irritant. May cause asthmatic reaction or allergic skin reaction in susceptible individuals.
Chronic Toxicity	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.
Carcinogen Status:	
IARC	Not listed, International Agency for Research on Cancer
NTP Annual Report	Not listed, National Toxicology Program
OSHA Subpart Z	Not listed.
U.S. EPA Genetic Toxicity	Reported, Genetic Toxicology Program
Mutagen Status	Not listed.
Teratogen Status	Not listed.

SECTION 12

Ecological Information

Persistence and Degradability	Does not readily deteriorate in the environment. Reacts slowly with moisture to form vanadium pentoxide. (See Section 10.)
Aquatic Toxicity and Other Data Relating to Ecotoxicity	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: Yes. 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:



7-1-04

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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.

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The material difference is value.