

MATERIAL SAFETY DATA SHEET



Complies with U.S. OSHA
E.C. Guideline 91/155/EEC:
Revision: 3
Last Revision: January 2008
Replaces: July 2004

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

Nitrovan[®] Vanadium

Article No.

V2, V3, V14

**Company Identification
And Inquiries**

Vametco Alloys (Pty.) Ltd. ; A Subsidiary of
Strategic Minerals Corporation Tel.: +27 12 318-3262
P.O. Box 595; Brits, South Africa Fax: +27 12 318-3201

Stratcor, Inc.; A Subsidiary of Strategic Minerals Corporation
4955 Steubenville Pike; Suite 305 Tel.: (412) 787-4500
Pittsburgh, Pa. 15204-9604: U.S.A. Fax: (412) 787-5030

SECTION 2

Composition and Information on Ingredients

Chemical Characterization:

Chemical Description	Vanadium Carbide Nitride
UN Number	None
DOT Guide	170
CAS No.	12069-91-9
EINECS No.	Not Listed
Percentage	98 to 99%

SECTION 3

Hazards Identification

Potential Hazards for Humans and Animals:

Eye Contact	Dust may irritate. Chips may cause corneal injury.
Skin Contact	Dust may cause contact dermatitis with itching and rash.
Inhalation	Dust may irritate the respiratory tract and cause coughing. Extreme or repeated exposure may cause bronchitis.
Ingestion	No expected effects.

SECTION 4

First-Aid Measures

General Information:

Inhalation	Leave dusty area. Breathing assistance if necessary.
Skin	Wash with soap and water.
Eyes	Flush with water 15 minutes to remove particles. See a physician if irritation persists.
Ingestion	No expected emergency care anticipated.

SECTION 5 Fire-Fighting Measures

Suitable Extinguishing Media	Class D fire. Use dry chemical, completely dry sand, or carbon dioxide to smother.
Extinguishing Media Not to Be Used	Water sprayed on burning material may generate hydrogen gas.
Special Exposure Hazards	Avoid creating dust. Fine dust suspended in air may ignite in the presence of a flame or high-temperature heat source.
Special Protective Equipment for Fire Fighters	Full protective equipment including positive-pressure breathing apparatus.

SECTION 6 Accidental- Release Measures

Personal Precautions	Skin, eye, and respiratory protection as needed by conditions.
Environmental Precautions	Not an environmentally-sensitive material.
Cleaning Methods	Vacuum preferred – or sweeping.
Additional Information	Avoid decontamination procedures which create airborne dusting. Use ventilation if necessary to control dusting. Avoid use of compressed air. Keep ignition sources away from spill area.

SECTION 7 Handling and Storage

Handling	Avoid procedures that cause dust. Keep away from sparks, heat, and open flame.
Milling	Precautions should be taken when crushing or milling this material to a fine-particle size (nominally less than 200 mesh with over 50% less than 325 mesh). Consideration should be given to performing these operations in an inert atmosphere or under vacuum.
Storage	Material should be kept dry and in closed containers. Keep away from sparks, heat, and open flame in a well-ventilated area away from combustible materials.

SECTION 8 Exposure Controls and Personal Protection

Recommendations on Equipment Designs	Proper dust collection. Minimize dust during dumping operations. Avoid procedures that cause sparks
Occupational Exposure Limit	1 mg vanadium per cu. m for vanadium alloys (NIOSH). 5 mg per cu. m for Respirable Dust (PNOR)** (OSHA). 15 mg per cu. m for Total Dust (PNOR)** (OSHA). **PNOR = Particulates Not Otherwise Regulated
Personal Safety Equipment: Respiratory Protection	Use respirators approved by NIOSH/MSHA or competent local authority.
Hand Protection	Use protective gloves and barrier creams.
Eye Protection	Use face shields, face screens, goggles or safety glasses with side shields.
Skin Protection	Not normally required.
Personal Hygiene	Wash 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	Pellets, approximately 35 gm each.
Color	Dark-gray metallic.
Odor	None.
Change in Physical State:	
Melting Point	2427°C (4400°F).
Boiling Point	Not available.
Vapor Pressure	Essentially zero.
Flash Point	Not applicable.
Flammability	Dust is combustible. Pellets will burn slowly if heated to a high temperature in air.
Ignition Temperature	Not applicable.
Auto Flammability	Not applicable.
Oxidizing Properties	None.
Explosive Properties	Dust is combustible. Pellets will burn slowly if heated to a high temperature in air.
Bulk Density	1.6 g per cc (100 lb. per cu. ft.)
Solubility in Water (20°C)	Insoluble.
pH Value	Not applicable.

SECTION 10

Stability and Reactivity

Conditions to Avoid	Situations which cause dusting, fire, and high temperatures.
Incompatible Materials	None.
Hazardous Decomposition	Unstable in air at temperatures above 150°C (302°F) with slow conversion to vanadium oxides.

SECTION 11

Toxicological Information

Acute Toxicity	Not listed.
Irritation	Mild respiratory irritant. May be a mild skin irritant
Chronic Toxicity	None noted.
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	Not listed.
Mutagen Status	Not listed.
Teratogen Status	Not listed.

SECTION 12

Ecological Information

Persistence and Degradability	Will very slowly oxidize to vanadium oxide.
Aquatic Toxicity and Other Data Relating to Ecotoxicity	Not located. This substance is not soluble in water.

SECTION 13 Disposal Considerations

**Product
Recommendation**

This product contains no ingredients which are listed as Hazardous Substances by the U.S. EPA.

**Empty-Container
Recommendation**

This product does not possess characteristics which may qualify as hazardous waste. Waste and containers may be disposed of in accordance with applicable local guidelines. Unused product may be returned to supplier for recycling.

SECTION 14 Transport Information

This product is not identified as a Hazardous Substance.

U.N. packaging requirements shall be met for air and non-U.S. shipments.

Proper Shipping Description

Nitrovan® Vanadium. No special labeling, placarding, or identification is required by any agency.

Empty-Container Description

None required.

Land Transport

U.S. DOT or appropriate local guidelines.

Inland-Waterway Transport

U.S. DOT or appropriate local guidelines.

Ocean Transport

IMO / IMDG Code: Container shipments require a Container Packing Certificate.

Air Transport

ICAO-IT and IATA-DGR: No limit on quantity.

SECTION 15 Regulatory Information

This product is not identified as a Hazardous Substance.

**Classification According to
U.N. Guidelines**

None.

E.C. Danger Symbol

None.

R-phrases

None.

S-phrases

None.

U.S. EPA TSCA Inventory

Listed.

**U.S. EPA SARA III
Section 302 and 304**

Notification may be required. Check local regulations.

**U.S. EPA SARA III
Section 311 and 312**

Notification may be required. Check local regulations.

**U.S. EPA SARA III
Section 313**

Not required.

Non-U.S. Regulations

Refer to specific national guidelines.

SECTION 16 Other Information

Data Sheet Prepared by:


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1-15-08

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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.