

MATERIAL SAFETY DATA SHEET



Complies with U.S. OSHA
E.C. Guideline 91/155/EEC:

Revision: 2
Effective: March 2013
Replaces: May 2012

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**

Bushveld Vametco Alloys (Pty.) Ltd. Tel.: +27 12 318-3200
P.O. Box 595; Brits, South Africa Fax: +27 12 318-3201

www.nitrovan.co.za

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

SECTION 9

Physical and Chemical Properties

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

Appearance:	Solid.
Physical State	Pellets, approximately 35 gm each.
Form	Dark-gray metallic.
Color	None.
Odor	
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:

28-08-18

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Sheq Manager, Bushveld Vametco Alloys, Brits, South Africa

Bushveld Vametco Alloys 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 Bushveld Vametco Alloys 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 Bushveld Vametco Alloys and may not apply to products sold by others.

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