

Vanadium(V) oxide
MSDS# 45278

Section 1 - Chemical Product and Company Identification

MSDS Name:

Vanadium(V) oxide

Catalog Numbers:

20642-0000, 20642-0050, 20642-2500, 20799-0000, 20799-0050, 20799-5000,
V/0100/48, V/0100/53, V/0100/70

Synonyms:

Vanadium pentoxide; Divanadium pentoxide; Vanadic anhydride; Vanadic acid anhydride.

Company Identification: Fisher Scientific UK

Bishop Meadow Road, Loughborough
Leics. LE11 5RG

For information in Europe, call:(01509) 231166

Emergency Number, Europe:01509 231166

Section 2 - Composition, Information on Ingredients

CAS#: 1314-62-1
Chemical Name: Vanadium pentoxide
%: >98
EINECS#: 215-239-8

Hazard Symbols:

T N

Risk Phrases:

20/22 37 48/23 51/53 63 68

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful by inhalation and if swallowed. Irritating to respiratory system. Toxic : danger of serious damage to health by prolonged exposure through inhalation. Possible risk of harm to the unborn child. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.Possible risk of irreversible effects.

Potential Health Effects

Eye:

Causes eye irritation. Causes redness and pain.

Skin:

May cause skin irritation. May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material.

Ingestion:

May be fatal if swallowed. May cause central nervous system effects.

Inhalation:

Causes respiratory tract irritation. May cause effects similar to those described for ingestion. May cause lung damage. May cause asthma and shortness of breath.

Chronic:

Chronic inhalation and ingestion may cause effects similar to those of acute inhalation and ingestion.

Section 4 - First Aid Measures

Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin:

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion:

If victim is conscious and alert, give 2-4 cupfuls of milk or water.

Never give anything by mouth to an unconscious person. Get medical aid immediately. Wash mouth out with water.

Inhalation:

Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Substance is noncombustible. Decomposes at high temperatures releasing oxygen which may cause an existing fire to burn more vigorously.

Extinguishing Media:

Use extinguishing media most appropriate for the surrounding fire.

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Do not breathe dust or fumes. Use only with adequate ventilation.

Storage:

Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general

or

local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

CAS# 1314-62-1:

United Kingdom, WEL - TWA: 0.05 mg/m³ TWA

United Kingdom, WEL - STEL: 0.15 mg/m³ STEL

Belgium - TWA: 0.05 mg/m³ VLE (fume, respirable fraction, as V205)

France - VME: 0.05 mg/m³ VME (dust and fume, as V205)

Germany: 0.05 mg/m³ TWA (respirable fraction, exposure factor 1)

Japan: 0.05 mg/m³ OEL

Malaysia: 0.05 mg/m³ TWA (respirable dust or fume)

Spain: 0.05 mg/m³ VLA-ED (respirable dust or fume, as V205)

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical

safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:

Wear appropriate protective gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid
Color: yellow to brown
Odor: None reported.
pH: 4 (50g/l slurry)
Vapor Pressure: 0.0443 hPa @ 700 deg C
Viscosity: Not available
Boiling Point: 1750 deg C (3,182.00°F)
Freezing/Melting Point: 690 deg C (1,274.00°F)
Autoignition Temperature: Not applicable
Flash Point: Not applicable.
Explosion Limits: Lower:Not available
Explosion Limits: Upper:Not available
Decomposition Temperature:
Solubility in water: 1g/125ml
Specific Gravity/Density: 3.35 g/cm3
Molecular Formula: O5V2
Molecular Weight: 181.88

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures.

Conditions to Avoid:

Dust generation.

Incompatibilities with Other Materials

Alkali metals, hydrochloric acid.

Hazardous Decomposition Products

Irritating and toxic fumes and gases, vanadium oxide (VOx) gases.

Hazardous Polymerization

Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 1314-62-1: YW2125000 YW2450000 YW2460000

LD50/LC50:

RTECS: CAS# 1314-62-1: Draize test, rabbit, eye: 20 mg/24H
Moderate; Inhalation, rat: LC50 = 126 mg/m3/6H; Oral, mouse:
LD50 = 23.4 mg/kg; Oral, mouse: LD50 = 5 mg/kg; Oral, rat:
LD50 = 10 mg/kg; Skin, rabbit: LD50 = 50 mg/kg;.

Carcinogenicity:

Vanadium pentoxide -

California: carcinogen, initial date 2/11/05

IARC: Group 2B carcinogen

Other:

See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

IATA

Shipping Name: VANADIUM PENTOXIDE
Hazard Class: 6.1
UN Number: 2862
Packing Group: III

IMO

Shipping Name: VANADIUM PENTOXIDE
Hazard Class: 6.1
UN Number: 2862
Packing Group: III

RID/ADR

Shipping Name: VANADIUM PENTOXIDE
Hazard Class: 6.1
UN Number: 2862
Packing Group: II

USA RQ: CAS# 1314-62-1: 1000 lb final RQ; 454 kg final RQ
Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: T N

Risk Phrases:

R 20/22 Harmful by inhalation and if swallowed.
R 37 Irritating to respiratory system.
R 48/23 Toxic : danger of serious damage to health
by prolonged exposure through inhalation.
R 51/53 Toxic to aquatic organisms, may cause
long-term adverse effects in the aquatic environment.
R 63 Possible risk of harm to the unborn child.
R 68 Possible risk of irreversible effects.

Safety Phrases:

S 36/37 Wear suitable protective clothing and
gloves.
S 38 In case of insufficient ventilation, wear
suitable respiratory equipment.
S 45 In case of accident or if you feel unwell, seek
medical advice immediately (show the label where
possible).
S 61 Avoid release to the environment. Refer to
special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 1314-62-1: 2

Canada

CAS# 1314-62-1 is listed on Canada's DSL List

US Federal

TSCA

CAS# 1314-62-1 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:

8/24/1997

Revision #6 Date

6/22/2006

Revisions were made in Sections:

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