

SAFETY DATA SHEET

1. Chemical Product and Company Identification

ProductName V2O5 (Powder, Grain, Tablet, Target, Code #:VVO12PB,VVO03GB)

Reference NO. VVO03TAG-001

Creation Date 2025/11/17

Company Name : Kojundo Chemical Laboratory Co.,Ltd.
information Address : 5-1-28, Chiyoda, Sakado , Saitama, 350-0284, Japan
Name of Section : Quality Assurance Dept.
TEL : +81-49-284-1511
FAX : +81-49-284-1351

Product Use For research purposes

Restriction of use Seek expert judgment when using the product for applications other than those recommended

2. Hazards identification

[GHS CLASSIFICATION]

PHYSICAL HAZARDS

Not Classification criteria.

HEALTH HAZARDS

Acute toxicity(oral) : Category3
Acute toxicity(inhalation:dusts and mists) : Category2
Serious eye damage/Eye Irritation : Category1
Germ cell mutagenicity : Category2
Carcinogenicity : Category1B
Reproductive toxicity : Category2
Specific target organ toxicity(single exposure) : Category1 (Liver,Respiratory tract,Kidney)
Specific target organ toxicity(repeated exposure) : Category1 (Respiratory tract)

ENVIRONMENTAL HAZARDS

Hazard to the aquatic environment (acute) : Category2
Hazard to the aquatic environment (chronic) : Category1

[GHS LABEL ELEMENTS]

Pictogram



Signal Word : Danger

Hazard Statement : Toxic if swallowed(H301)
: Causes serious eye damage(H318)
: Fatal if inhaled(H330)
: Suspected of causing genetic defects(H341)

- : May cause cancer(H350)
- : Suspected of damaging fertility or the unborn child(H361)
- : Causes damage to organs (Liver,Respiratory tract,Kidney)(H370)
- : Causes damage to organs (Respiratory tract)(H372)
- : Toxic to aquatic life(H401)
- : Very toxic to aquatic life with long lasting effects(H410)

Precautionary Statement

- Safety measures :
- Obtain special instructions before use.(P201)
 - Do not handle until all safety precautions have been read and understood.(P202)
 - Do not breathe dust/fume/gas/mist/vapours/spray.(P260)
 - Wash the competent authority to specify parts of the body to be washed after handling. thoroughly after handling.(P264)
 - Do not eat, drink or smoke when using this product.(P270)
 - Use only outdoors or in a well-ventilated area.(P271)
 - Avoid release to the environment.(P273)
 - Wear protective gloves/protective clothing/eye protection/face protection.(P280)
 - In case of inadequate ventilation wear respiratory protection.(P284)

- First aid measures :
- Get medical advice/attention if you feel unwell.(P314)
 - Specific treatment is urgent .(P320)
 - Specific treatment.(P321)
 - Rinse mouth.(P330)
 - Collect spillage.(P391)
 - IF SWALLOWED: Immediately call a POISON CENTER/doctor(P301+P310)
 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.(P304+P340)
 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.(P305+P351+P338)
 - IF exposed or concerned: Call a POISON CENTER/doctor(P308+P311)
 - IF exposed or concerned: Get medical advice/ attention.(P308+P313)

- Storage :
- Store locked up.(P405)
 - Store in a well-ventilated place. Keep container tightly closed.(P403+P233)

- Disposal :
- Dispose of contents/container in accordance with local/regional/national/international regulation.(P501)

3. Composition/information on ingredients

Classification of the substance or mixture : Substance

Chemical name	Concentration(%)	CAS RN®
Divanadium pentaoxide	100.00	1314-62-1

4. First aid measures

- Inhalation :
- Remove the exposed person immediately and provide fresh air. Get medical attention.

Skin contact	: Promptly flush contaminated skin with soap or mild detergent and water. Contact Dermatologist if irritation continues.
Eye contact	: Rinse cautiously with water for 15 minutes. Get medical attention from an ophthalmologist. When washing your eyes, hold your eyelids open with your fingers to allow water to reach every corner of your eyeballs and eyelids.
Ingestion	: Rinse mouth and throat with water. Get medical attention immediately.
Necessary precautions for protection of person performing first aid measures	: Rescue workers wear appropriate eye and skin protection equipment according to the situation.
Special precautions for doctors	: The doctor should carry out treatment that corresponds to the patient's symptoms.

5. Fire fighting measures

Suitable extinguishing media	: Use media appropriate for surrounding fire.
Unsuitable extinguishing media ※	: No information available
Special hazards arising from the substance or mixture	: Danger to generate irritating, corrosive and toxic gases during fire. : Fire extinguishing water may cause pollution.
Special protective equipment and precautions for fire-fighters	: Wear appropriate respiratory air and the protective clothing (heat resistance).

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Remove all ignition sources. : Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its vapor/dusts. Indoor leakage: Ventilate as much as possible until the cleaning is completed. Outdoor leakage: Work from the windward and evacuate the leeward crowd.
Environmental precautions	: Prevent flow out to river, etc. so as not to badly affect.
Methods and material for containment and cleaning up	: Shut off leak if without risk. Avoid unnecessary contacts with spills. : Gather up, pack in closed DOT-approved waste container as much as possible. Carefully collect remnant and move to a safe place.
Measures to prevent secondary disasters	: Prevent leakage into sewer, rivers and etc., and take measures to prevent environmental pollution.

7. Handling and storage

Handling	
Technical measures	: No information available
Precautions for safe handling	: If dust is generated. Use explosion-proof electrical/ventilating/lighting equipment. Fine powder originated from the products (excluding non-oxidizing oxides) has very high reactivity.
Avoid contact	: Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen. Avoid prolonged or repeated exposure.
Hygiene measures	: Do not eat, drink or smoke when using this product. : Wash hands thoroughly after handling.

Storage

- Safe storage conditions : Store the material in a sealed container.
Store in a cool, dry, well ventilated and dark place away from incompatible materials.
: Store in a locked designated storage area.
: Store molded products such as targets in an unopened condition.
- Safe container packaging materials : No information available

8. Exposure controls / Personal protection**Control parameters**

Chemical name	ACGIH	OSHA
Divanadium pentaoxide	TWA:0.05mg/m3 (I, as V)	TWA:0.5mg/m3 (R,C, as V2O5), 0.1mg/m3 (F,C, as V2O5)

- Equipment : Install the appropriate general ventilation equipment, local exhaust ventilation in the workplace.
- Personal protection
- Respiratory protection : Wear appropriate NIOSH/MSHA-approved respirator.
- Hand protection : Wear appropriate NIOSH/MSHA-approved impervious gloves.
- Eye and face protection : Wear appropriate NIOSH/MSHA-approved safety goggles.
- Skin and body protection : Wear appropriate NIOSH/MSHA-approved impervious protective wear, protective boots.
- Special precautions : Regularly check your protective gear.
: The notes for the table are as follows.
D: Dust, M: Mist, F: Fumes, I: Inhalable particles, R: Respirable particles, IFV: Inhalable particles and vapors, T: Total dust, V: Vapors, C: Ceiling limit

9. Physical and chemical properties

- Physical state : Solid
- Color : Yellow~Red
- Odour : No information available
- Melting point/Freezing point : 690°C
- Boiling point, initial boiling point and boiling range : No information available
- Flammability : No information available
- Range of explosion (lower bound - upper bound) : No information available
- Flash point : No information available
- Autoignition temperature : No information available
- Decomposition temperature : 1750°C
- pH : No information available
- Kinematic viscosity : No information available
- Solubility : Slightly Soluble in water
- Partition coefficient (n-octanol/water) : No information available
- Vapor pressure : No information available
- Density/Specific gravity : 3.35g/cm3
- Relative vapor density : No information available

Particle characteristics : No information available
Other : F.W. : 181.9

10. Stability and reactivity

Reactivity : No information available
Chemical stability : Stable when stored in sealed container (at room temperature).
Possibility of hazardous reactions : No information available
Conditions to avoid : Keep away from direct sunlight. Store in a cool, dark place.
Incompatible materials : No information available
Hazardous decomposition products : No information available

11. Toxicological information

Acute toxicity(oral)
Divanadium pentaoxide : Category3
Acute toxicity(dermal)
No information available
Acute toxicity(inhalation:gases)
No information available
Acute toxicity(inhalation:vapours)
No information available
Acute toxicity(inhalation:dusts and mists)
Divanadium pentaoxide : Category2
Skin corrosion/Skin irritation
No information available
Serious eye damage/Eye Irritation
Divanadium pentaoxide : Category1
Respiratory sensitizer
No information available
Skin sensitizer
No information available
Germ cell mutagenicity
Divanadium pentaoxide : Category2
Carcinogenicity
Divanadium pentaoxide : Category1B
Toxic to reproduction/Effects on or via lactation
Divanadium pentaoxide : Category2
Specific target organ toxicity(single exposure)
Divanadium pentaoxide : Category1(Liver,Respiratory tract,Kidney)
Specific target organ toxicity(repeated exposure)
Divanadium pentaoxide : Category1(Respiratory tract)
Aspiration hazard
No information available

12. Ecological information

Hazard to the aquatic environment (acute)
Divanadium pentaoxide : Category2
Hazard to the aquatic environment (chronic)
Divanadium pentaoxide : Category1

Hazardous to the ozone layer
No information available

Ecotoxicity/Fish toxicity
No information available

Ecotoxicity/ Invertebrate toxicity
No information available

Ecotoxicity/ Algal toxicity
No information available

Persistence and degradability
No information available

Bioaccumulative potential
No information available

Mobility in soil
No information available

13. Disposal considerations

Remained waste : Discard in accordance with the standards of the local government and relevant legislation.

A polluted container and packing : When disposing of empty containers, empty containers are processed in accordance with the standards of the local government as well as the related laws and regulations and waste disposal method after contents are completely removed.

14. Transport information

UN number : 2862

Guideline Number : 151

Shipping name : VANADIUM PENTOXIDE, non-fused form

UN Class : Class6 Toxic and infectious substances

Packing group : III

Subsidiary risk(s) : -

MARINE POLLUTANT : Applicable

Transport in bulk according to MARPOL 73/78,Annex II ,and the IBC code : Not applicable

Special safety measures for transport or means of transport : Follow "7. Handling and storage"

: Check no leak of container, handle without overturning, falling and damaging, then reliably prevent from cargo shift.

Domestic regulations

Ground transport : Follow the transportation method specified in the Fire Service Law and the Industrial Safety and Health Law.

Marine transport : Follow the transportation method specified in the Ship Safety Law.

Air transport : Follow the transportation method specified in the Aviation Law.

15. Regulatory information

Follow relevant national and local regulations.

16. Other information

This " Safety Data Sheet(SDS)" is for provision of information, and it does not represent a guarantee the properties or safeties of the product.

Since not all materials and literature have been investigated, information may be omitted, and changes may occur in the content due to the discovery of new findings or corrections of previous theories.

The information contained herein is based on information in our possession, but we do not guarantee the completeness of the information.

It is subject to revision based on changes in laws and regulations and new findings.

When using this information for important decisions, we recommend that you carefully review the source of the information or verify it through testing.

Values of ingredients, content, physicochemical properties, etc., are not quality assurance values.

Prior to use, please investigate the laws and regulations of the organization, area and country where the product is to be used.

The information is intended to ordinary usage, in case of special handling, sufficient care should be taken.

※ We recommend not using fire extinguishing medias that are also listed as "Suitable extinguishing media".