

## GHS Safety Data Sheet

SDS No. : VVO02TAEG

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### Section 1. Identification of the substance or mixture and of the supplier

#### 1.1 Product Information

Product name: V<sub>2</sub>O<sub>5</sub> Vanadium (V) oxide

Product number	Purity	Form	Size (mm) or Shape
VVO03GB	99.9%(3N)	grains	2-5mm (by melt-solidification)
—	—	rod	Various sizes
—	—	target	101.6Φx5 t,152.4Φx5t ,Various sizes

#### 1.2 Company Information:

Manufacturer : Kojundo Chemical Laboratory Co., Ltd

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### Section 2. Hazards identification

#### GHS Classification

Health Hazards	Environmental Hazards	Physical Hazards
Acute toxicity (oral) ; Category 2 (inhalation ; dusts,mist) ; Category4 Serious eye damage/eye irritation ; Category2A Germ cell mutagenicity ; Category 1B Carcinogenicity ; Category 2 Specific target organ toxicity, single exposure ; Category 1 repeated exposure ; Category 1 ; Category 2	Hazardous to the aquatic environment, acute toxicity ; Category 2 chronic toxicity ; Category 2	Flammable solids : Not classified Pyrophoric solids : Not classified Self-heating substances and mixtures : Not classified Substances and mixtures which, in contact with water, emit flammable gases : Not classified

GHS Label: T C V



Pictograms or symbols

Warning word: **DANGER**

#### Hazard information:

**Fatal if swallowed**  
**Harmful if inhaled**  
**Causes serious eye irritation**  
**May cause genetic defect**  
**Suspected of causing cancer**  
**Causes damage to organs**  
 (Respiratory system, Liver, Kidney)  
**Causes damage to organ (Respiratory system)**  
**through prolonged or repeated exposure.**

#### Description of precaution:

Obtain special instructions. Read and understand all safety precautions before handling.  
 Wear protective gloves/protective clothing/eye protection / respiratory protection/face protection during handling.  
 Avoid breathing dust/fume/spray.  
 Do not eat, drink or smoke when using this product, and wash hands thoroughly after handling.  
 Use only outdoors or in well-ventilated area.  
 Avoid release to the environment and collect spillage.  
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

**May cause damage to organs (Liver) through prolonged or repeated exposure**  
**Toxic to aquatic life**  
**Toxic to aquatic life with long lasting effects**

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth.  
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
 Call a POISON CENTER or doctor/physician if you feel unwell.  
 Store locked up.  
 Dispose of contents/ container in accordance with local/ national regulations.

**Additional hazard information :**

Heating may liberate toxic gases/fume.

With respect to additional hazard information, see Section 11.

**Section 3. Composition / information on ingredients**

Chemical or common name:	Vanadium (V) oxide
Chemical formula:	V <sub>2</sub> O <sub>5</sub>
Single Substance or Compound:	Single substance
Composition:	100%
CAS#:	1314-62-1
RTECS#:	YW2450000(dust) , YW2460000(fume)
TSCA inventory:	listed
EINECS:	2152398

**Section 4. First aid measures**

Eye contact:	Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes and get medical attention.
Skin contact:	Promptly flush contaminated skin with soap or mild detergent and water. Contact physician if irritation continues.
Inhalation:	Remove the exposed person immediately and provide fresh air. Get medical attention.
Ingestion:	Rinse mouth and throat with water. Get medical attention immediately.

**Section 5. Fire fighting measures**

Extinguishing media: The product cannot catch fire. Use media appropriate for surrounding fire.

Fire fighting: Remove containers to safe place if possible.  
Self-contained breathing apparatus and full protective clothing should be used, if the material is involved in fire.

Explosion hazards:  
Dust explosion: None.

Specific hazards arising from the chemical: Heating may liberate toxic gases/fume.

**Section 6. Accidental release measures**

Personal Precautions: Workers should use protective wears to prevent contact with the spilt adhesive and inhalation of its dust/ fume.

**Environmental hazard precautions:**

Shut off leak if without risk.

Prevent flow out to river, etc. so as not to badly affect.

**Method for containment and cleaning up:**

Indoor leakage: Ventilate as much as possible until the cleaning is completed.

Outdoor leakage: Work from the windward and evacuate the leeward crowd.

Gather up, pack in closed DOT-approved waste container as much as possible.

Carefully collect remnant and move to a safe place.=

## Section 7. Handling and storage

**Precautions to be taken in handling:**

Safe handling: Use protective wears and local ventilation equipment, if inhalation or skin contact is foreseen.

Avoid prolonged or repeated exposure.

**Precautions to be taken in storage:**

General precautions: Store in a cool, dry place away from incompatible materials.

Store locked up.

Keep container or bottle tightly closed.

## Section 8. Exposure controls / personal protection

Exposure guideline: ACGIH (2013): V<sub>2</sub>O<sub>5</sub> 0.05 mg/m<sup>3</sup> (Inhalable particle, as V)

OSHA (2006): V<sub>2</sub>O<sub>5</sub> Respirable fraction 0.5 mg/m<sup>3</sup> , Fume 0.1 mg/m<sup>3</sup>

Facility measures: Local ventilation of closed work room or total proper ventilation to prevent inhalation.

Protective ware: Wear appropriate NIOSH/MSHA-approved respirator, air-supplied respirator, safety goggles, face shields, protective gloves, protective clothing, apron, including boots.

## Section 9. Physical and chemical properties

Color and Form: Reddish yellow-yellowish brown solid, odorless.

Chemical formula: V<sub>2</sub>O<sub>5</sub>

Molecular weight: 181.9

Melting point: 690 °C

Boiling point: 1750 °C (decompose)

Density: 3.35 g/cm<sup>3</sup>

Solubility Water: Slightly soluble

Dissoluble: Acids, bases.

Insoluble: Ethanol

Flammable: non-flammable substance

Oxidation: No data available

## Section 10. Stability and reactivity

Stability:	Stable in closed container.
Reactivity	
Incompatibility:	Strong acids, chlorine trifluoride, lithium, peroxyformic acid, (Ca+S+H <sub>2</sub> O).
Condition to avoid:	Heat

## Section 11. Toxicological information

Acute toxicity:	GHS ; Category 2 (oral) : Fatal if swallowed V <sub>2</sub> O <sub>5</sub> (oral) oral rat LD <sub>50</sub> = 10 mg/kg (CERI(2001)) GHS ; Category 4 (inhalation ; dusts,mist) : Harmful if inhaled V <sub>2</sub> O <sub>5</sub> (dust) inhalation rat LD <sub>50</sub> = 4.29 mg/l(4hr) (IUCLID(2000))
Skin corrosive / irritation:	GHS ; No data available
Serious eyes damage / eye irritation:	GHS ; Category 2A : Causes serious eye irritation
Respiratory sensitization:	GHS ; No data available
Skin sensitization:	GHS ; No data available
Germ cell mutagenicity:	GHS ; Category 1B : May cause genetic defect
Carcinogenicity:	GHS ; Category 2 : Suspected of causing cancer ACGIH(2013) A4 : Confirmed animal carcinogen with unknown relevance to humans IARC(2015) group 2B : Possibly carcinogenic to humans.
Reproductive toxicity:	GHS ; No data available
Specific target organ toxicity —single exposure:	GHS ; Category 1 Causes damage to organs( Respiratory system, Liver, Kidney)
Specific target organ toxicity —repeated exposure:	GHS ; Category 1 Causes damage to organs (Respiratory system) through prolonged or repeated exposure. GHS ; Category 2 May cause damage to organs (Liver) through prolonged or repeated exposure.
Aspiration hazard:	GHS ; No data available
Other cautions:	Mechanical stimulation by dust affects eyes, skin and respiratory system

## Section 12. Ecological information

Ecotoxicity:	
Hazards to the aquatic environment —acute toxicity:	GHS ; Category 2 : Toxic to aquatic life
Hazards to the aquatic environment —chronic toxicity:	GHS ; Category 2 : Toxic to aquatic life with long lasting effects
Hazardous the ozone layer:	GHS ; No data available No Freon or Halon
Fish toxicity:	Daphnia magna LC50(48hr) =1.45 mg/L
Degradability:	No data available

Bioaccumulative potential: V : biological half-life 42 day,  
Rate of absorption oral=0.02, Respiratory tract=0.26

Mobility in soil: No data available

### **Section 13. Disposal considerations**

Disposal method: User of the product should contract with the local government or licensed  
'Industrial Waste Haulers' for disposal of waste.

### **Section 14. Transport information**

UN classification: Non-hazards  
UN number: None  
HS code: 2825.30  
Marine pollution: None  
Precautions: Container should be transported in a secure position, in a well-ventilated vehicle.

### **Section 15. Regulatory information**

TSCA inventory : listed.  
Please refer to any other local / national measures that may be relevant.

### **Section 16. Other information**

The information described above is believed to be correct. However, Kojundo Chemical Lab. makes no representation, warranty nor guarantee of any kind with respect to the information on this data sheet or any use of the product based upon this information.