

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Identifier: (4N) 99.99% Yttrium Vanadate

Product Code: Y-VO-04-C

CAS Number: 13566-12-6

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
10884 Weyburn Ave.
Los Angeles, CA 90024
Tel: +1 310-208-0551
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Emergency telephone number:
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SECTION 2. HAZARDS IDENTIFICATION

Signal Word: Danger



Hazard Statements:

H315 Causes skin irritation

H310: Fatal in contact with skin

H319 Causes serious eye irritation

H302+H332: Harmful if swallowed or if inhaled

H341: Suspected of causing genetic defects

H361: Suspected of damaging fertility or the unborn child

H335: May cause respiratory irritation

H372: Causes damage to organs through prolonged or repeated exposure

Precautionary Statements:

P260: Do not breathe dust/fume/gas/mist/vapors/spray

P280: Wear protective gloves/protective clothing/eye protection/face protection

P264: Wash thoroughly after handling

P361: Remove/Take off immediately all contaminated clothing

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

P302+P350: IF ON SKIN: Gently wash with plenty of soap and water
P304+P340: IF INHALED:
Remove victim to fresh air and keep at rest in a position comfortable for breathing
P337+P313: If eye irritation persists get medical advice/attention
P405: Store locked up
P501: Dispose of contents/container in accordance with local/regional/national/international regulations
HMIS Health Ratings (0-4):
Health: 3
Flammability: 0
Physical: 1

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Family:
Ceramic
Additional Names:
Yttrium vanadium oxide, Yttrium orthovanadate
Yttrium vanadate (YVO₄):
Percentage: 100 wt%
CAS#: 13566-12-6
EC #: 236-965-1

SECTION 4. FIRST AID MEASURES

General Treatment:
Seek medical attention if symptoms persist.
Special Treatment:
None
Important Symptoms:
None
Inhalation:
Remove victim to fresh air. Supply oxygen if breathing is difficult.
Ingestion:
Seek medical attention
Skin:
Wash affected area with mild soap and water. Remove any contaminated clothing.
Eyes:
Flush eyes with water, blinking often for several minutes.
Remove contact lenses if present and easy to do. Continue rinsing

SECTION 5. FIREFIGHTING MEASURES

Flammability:
Non-flammable
Extinguishing Media:
No special restrictions – use suitable extinguishing agent for surrounding material and type of fire.
Spec. Fire Fighting Procedure:
Use full-face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes.

See section 10 for decomposition products.

SECTION 6. ACCIDENTAL RELEASE MEASURES

If Material Is Released/Spilled:

Wear appropriate respiratory and protective equipment specified in special protection information. Isolate spill area and provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for disposal.

Take care not to raise dust.

Environmental Precautions:

Isolate runoff to prevent environmental pollution.

SECTION 7. HANDLING AND STORAGE

Handling Conditions:

Handle under dry protective gas.

Wash thoroughly after handling.

Storage Conditions:

Store in a cool dry place in a tightly sealed container.

Store under dry inert gas.

Store apart from materials and conditions listed in section 10.

Work/Hygienic

Maintenance:

Do not use tobacco or food in work area. Wash thoroughly before eating and smoking. Do not blow dust off clothing or skin with compressed air.

Ventilation:

Provide sufficient ventilation to maintain concentration at or below threshold limit.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Permissible Exposure Limits:

0.1 mg/m³ as V₂O₅, long-term value

Threshold Limit Value:

0.05 mg/m³ as V₂O₅, long-term value

Special Equipment: None

Respiratory Protection:

Use a respirator with type P100 (USA) or P3 (EN143) cartridges as a backup to engineering controls.

Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protective Gloves:

Nitrile rubber, NBR 0.11mm thick.

Eye Protection:

Safety glasses or goggles

Body Protection:

Protective work clothing.

Wear close-toed shoes and long sleeves/pants.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Color: N/A

Form: Powder, Granules, Pellets, Sputtering target, Custom parts

Odor: Odorless

Water Solubility: Insoluble

Boiling Point: N/A

Melting Point: N/A

Flash Point: N/A

Autoignition Temperature: N/A

Density: 4.24g/cc

Molecular weight: 203.85g/mol

SECTION 10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions

Reacts With: Mineral acids, Oxidizing agents

Incompatible Conditions: Water/moisture

Hazardous Decomposition Products: Metal oxide fume

SECTION 11. TOXICOLOGICAL INFORMATION

Potential Health Effects:

Eyes: May cause irritation

Skin: May cause irritation

Ingestion: Harmful

Inhalation: Toxic

Chronic:

Yttrium is similar to the lanthanons and may have an anticoagulant effect on blood. Exposure to lanthanons may also lead to sensitivity to heat, itching, increased awareness of odor and taste, and liver damage

Signs & Symptoms: N/A

Aggravated Medical Conditions: N/A

Median Lethal Dose:

566 mg/kg by mouth to rat as V₂O₃

200 mg/kg by skin to rabbit as V₂O₃

Carcinogen: N/A

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity: High

Persistent Bioaccumulation Toxicity: No

Very Persistent, Very Bioaccumulative: No

Notes:

Very toxic for aquatic organism.

May cause long lasting harmful effect on aquatic life.

Do not allow material to be released to the environment without official permits.

Do not allow product to reach any water sources.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies

Avoid transfer into the environment.

SECTION 13. DISPOSAL CONSIDERATIONS

Dispose of in accordance with local, state, national, and international regulations.

SECTION 14. TRANSPORT INFORMATION

Hazardous:

Hazardous for transportation as powder.

Hazard Class: 6.1 Toxic substances

Packing Group: II

UN Number: UN3285

Proper Shipping Name:

Vanadium compound, n.o.s (Yttrium vanadate)

SECTION 15. REGULATORY INFORMATION

Sec 302 Extremely Hazardous:

No

Sec 304 Reportable Quantities:

N/A

Sec 313

Toxic Chemicals: Yes (Vanadium oxide)

16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2019 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.