

**VANADIUM PENTOXIDE
SAFETY DATA SHEET**

DATE OF LAST REVISION: 07/22/15

Section 1: Identification

Product Name: Vanadium Pentoxide
Company: Angstrom Sciences, Inc.
40 South Linden Street
Duquesne, PA 15110
For more information call: 412-469-8466
(Monday - Friday 9:00-5:00 EST)

Section 2: HAZARD IDENTIFICATION

Signal Word: Danger



Hazard Statements: 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/vapours/spray
P281: Use personal protective equipment as required
P304 + P340: If Inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P405: Store locked up
P501: Dispose of contents/container in accordance with local/regional/national/international regulations

HMIS Health Ratings (0-4):

Health:	2
Flammability:	0
Physical	1

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Section 3: Composition/Information on Ingredients

Chemical characterization: Ceramic

Additional Names: Vanadium (V) oxide, Vanadium oxide, Vanadia, Divanadium pentaoxide, Vanadic anhydride

Percentage: 100 wt%

CAS# Description: 1314-62-1

EC number: 215-239-8

Section 4: FIRST AID MEASURES

General Treatment: Seek medical attention if symptoms persist.

Special Treatment: None

Important Symptoms: None

Eye Contact: Flush eyes with water, blinking often for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Skin Contact: Wash affected area with mild soap and water. Remove any contaminated clothing.

Inhalation: Remove to fresh air. If required, give artificial respiration. Seek medical advice.

Ingestion: Seek medical attention.

Section 5: FIRE FIGHTING MEASURES

Flammability: Non-flammable, except as powder

Special 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.

Extinguishing Media: No special restrictions - Use suitable extinguishing agent for surrounding material and type of fire.

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.

Environmental Precautions: Isolate runoff to prevent environmental pollution.

Section 7: HANDLING AND STORAGE

Handling Precautions for safe handling: Wash thoroughly after handling.

Conditions for safe storage, including any incompatibilities Store in a cool dry place in a tightly sealed container. 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.

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SAFETY DATA SHEET

Section 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Permissible Exposure Limits:	0.1 mg/m ³ as V ₂ O ₅ , long-term value
Threshold Limit Value:	0.05 mg/m ³ as V ₂ O ₅ , long-term value
Special Equipment:	None
Respiratory Protection:	Dust Respirator
Protective Gloves:	Rubber Gloves
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

Appearance:

Form:	Powder, Granules, Pellets, Sputtering target, Custom parts
Color:	Light Yellow
Odor:	Odorless
Water Solubility:	8 g/l
Boiling Point:	1750° C
Melting Point:	690°C
Flash Point:	N/A
Autoignition Temperature:	N/A
Density:	3.57 g/cc
Molecular Weight:	N/A g/mol

Section 10: STABILITY AND REACTIVITY

Reactivity:	Oxidizing agents
Chemical Stability:	Stable under recommended storage conditions
Incompatible Conditions:	None
Hazardous Decomposition Products:	Metal oxide fume

Section 11: TOXICOLOGICAL INFORMATION

Potential Health Effects:

Eyes: May cause serious irritation

Skin: May cause irritation

Ingestion: May cause irritation

Inhalation: May cause irritation

Chronic: N/A

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SAFETY DATA SHEET

Signs & Symptoms:	N/A
Aggravated Medical Conditions:	N/A
Median Lethal Dose:	N/A
Carcinogen:	IARC-2B: Possibly carcinogenic to humans: limited evidence in human in the absence of sufficient evidence in experimental animals. ACGIH A3: Animal carcinogen: Agent is carcinogenic in experimental animals at a relatively high dose, by routes of administration, at sites, of histologic types, or by mechanisms not considered relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence suggests that the agent is not likely to cause cancer in humans except under uncommon or unlikely routes or level of exposure.

Section 12: ECOLOGICAL INFORMATION

Aquatic Toxicity: high

Persistence 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 proper governmental 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 as powder and pieces



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SAFETY DATA SHEET**

Hazard Class: 6.1 Toxic substances
Packing Group: III
UN Number: UN2862
Proper Shipping Name: Vanadium pentoxide

Section 15: REGULATORY INFORMATION

Sec 302 Extremely Hazardous: No
Sec 304 Reportable Quantities: N/A
Sec 313 Toxic Chemicals: Yes

Section 16: OTHER INFORMATION

This safety data sheet should be used in conjunction with technical sheets. It does not replace them. The information given is based on our knowledge of this product, at the time of publication. It is given in good faith. The attention of the user is drawn to the possible risks incurred by using the product for any other purpose other than that for which it was intended. This does not in any way excuse the user from knowing and applying all the regulations governing his activity. It is the sole responsibility of the user to take all precautions required in handling the product. The aim of the mandatory regulations mentioned is to help the user to fulfill his obligations regarding the use of hazardous products.