Pfaltz & Bauer
RARE AND FINE CHEMICALS
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SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

Product Name:	Vanadium pentoxide 99.5%
Product Code:	V00460
Supplier:	Pfaltz & Bauer, Inc. 172 E. Aurora Street Waterbury, CT 06708 USA
Phone:	203-574-0075
FAX:	203-574-3181
Emergency Phone:	INFOTRAC, US: 1-800-535-5053 INFOTRAC, INTERNATIONAL: +1-352-323-3500

SECTION 2: HAZARDS IDENTIFICATION

Statement of Hazard:	Environmentally hazardous, Irritant, Respiratory irritant, Toxic
Acute Health Hazard:	Irritant to eyes, skin, mucous membranes and respiratory system. May be fatal by ingestion, toxic by skin absorption and inhalation.
Chronic Health Hazard:	Mutagen, Target organ effect, Teratogen
HMIS Rating:	H: 4 F: 0 P: 0
NFPA Rating:	H: 3 F: 0 R: 0

To the best of our knowledge, the toxicological properties of this chemical have not been thoroughly investigated. Use appropriate procedures and precautions to prevent or minimize exposure.

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS):
GHS Classification in accordance with Regulation (EC) No 1272/2008:

Acute toxicity, dermal (Category 3), H311
Acute toxicity, inhalation (Category 3), H331
Acute toxicity, oral (Category 1), H300
Germ cell mutagenicity (Category 2), H341
Hazardous to the aquatic environment, chronic toxicity (Category 1), H410
Reproductive toxicity (Category 2), H361
Serious eye damage/eye irritation (Category 2A), H319
Skin corrosion/irritation (Category 2), H315
Specific target organ toxicity, repeated exposure (Category 1), H372
Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3), H335

Pictogram:

Signal Word: Danger

Hazard Statement(s):
H300 Fatal if swallowed.
H311 Toxic in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure
H410 Very toxic to aquatic life with long-lasting effects.

Precautionary Statement(s):
P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352 IF ON SKIN: 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.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 IF exposed or concerned: Get medical advice/attention.
P332+P313 IF SKIN irritation occurs: Get medical advice/attention.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.

SECTION 3: COMPOSITION/INFORMATION on INGREDIENTS

Chemical Name: Vanadium pentoxide 99.5%

Synonyms: Vanadium(V) oxide; Vanadic acid

CAS Number:	1314-62-1
MDL Number:	MFCD00011457
EINECS Number:	215-239-8
Beilstein Registry Number:	Not Available
Molecular Formula:	V_2O_5
Molecular Weight:	181.88
Content:	As specified in product name.

SECTION 4: FIRST AID MEASURES

Eye Contact:	Flush eyes with large amounts of water for fifteen minutes. Separate eyelids with fingers. If irritation persists, seek medical attention.
Skin Contact:	Wash skin with soap and water. If irritation persists, seek medical attention.
Ingestion:	Do not induce vomiting. Seek medical attention.
Inhalation:	Move to a fresh air environment. Contact a physician if breathing becomes difficult.

SECTION 5: FIRE FIGHTING MEASURES

Flash Point (ºC):	Not Available
Explosion Limits:	Not Available
Auto Ignition Temperature (ºC):	Not Available
Extinguishing Media:	Carbon dioxide, dry chemical powder, alcohol-resistant foam, or water spray
Protective Equipment:	Wear self-contained respirator and fully protective impervious suit.
Specific Hazards:	May emit hazardous fumes under fire conditions.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Protection: Wear a self-contained breathing apparatus, rubber boots and gloves, and disposable coveralls. Dispose of coveralls after use. Remove from ignition sources if safe to do so. Follow emergency response plan and contact proper authorities if needed.
Keep unprotected persons away.

Environmental Protection: Keep spills out of sewers and bodies of water. Dike and contain the spill with inert material. Absorb on sand, vermiculite or diatomite. Transfer material to a container for disposal or recovery. Ventilate area and wash spill site after material pickup is complete.

SECTION 7: HANDLING and STORAGE

Handling and Storage: Avoid breathing dust, vapor, mist or gas. Avoid contact with skin and eyes. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Open and handle container with care. Keep ignition sources away.
Store in a tightly closed container in a dry, well-ventilated place.

Sensitivities: Not Available

Storage Temperature (ºC): 15 to 30

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use product in a well ventilated area or under a fume hood. Use proper lab equipment while handling this product. Keep away from incompatible materials for possible risk of hazardous reaction.

Eye Protection: Wear appropriate protective eyeglass or chemical safety goggles. Make sure that there is an eyewash station in your vicinity.

Skin Protection: Wear impervious gloves and protective clothing.

Respiratory Protection: Use a NIOSH approved respirator when exposure limits are exceeded or if irritation or other symptoms are experienced.

Exposure Limits:

Country	Source	Type	Value
USA	ACGIH	TWA	0.05 mg/m³
USA	OSHA	STEL	Not Available
USA	OSHA	PEL	Not Available

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

Appearance: Orange to brown powder

Odor: Not Available

Odor Threshold: Not Available

Flash Point (ºC):	Not Available
Auto Ignition Temperature (ºC):	Not Available
UEL % by Volume:	Not Available
LEL % by Volume:	Not Available
Melting Point (ºC):	690
Boiling Point (ºC):	1750
Evaporation Rate:	Not Available
pH Value:	Not Available
Density (g/cm³):	3.357
Refractive Index (n^{20}_{D}):	Not Available
Viscosity:	Not Available
Solubility in Water:	Slightly soluble
Solubility in Other:	Not Available
Vapor Pressure (mmHg):	Not Available
Vapor Density (Air=1):	6.3

SECTION 10: STABILITY and REACTIVITY

Stability:	Stable under normal temperatures and pressures.
Incompatibility:	Strong acids, Strong oxidizing agents
Reactivity:	Product may react with incompatible materials to release other hazardous substances.
Conditions to Avoid:	Heat, flame, sparks, other ignition sources.
Hazardous Decomposition Products:	Vanadium oxides

SECTION 11: TOXICOLOGICAL INFORMATION

RTECS Reference: YW2450000

Target Organs: Lungs

Toxicity Data:

Oral Rat LD_{50} mg/kg:	10.00
Oral Mouse LD_{50} mg/kg:	5.00
Dermal Rabbit LD_{50} mg/kg:	50.00
Intraperitoneal Rat LD_{50} mg/kg:	12.00
Intraperitoneal Mouse LD_{50} mg/kg:	23.00
Subcutaneous Rat LD_{50} mg/kg:	14.00

Carcinogenicity: National Toxicology Program (NTP) listed: Not Available

International Agency for Research on Cancer (IARC) listed: Not Available

Potential Symptoms: Not Available

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:

Rainbow trout LC_{50}:	5.20 mg/l - 96 hrs.
Flathead minnow LC_{50}:	1.80 mg/l - 1.80 hrs.
Water flea LC_{50}:	0.94 mg/l - 0.94 hrs.

SECTION 13: DISPOSAL CONSIDERATIONS

Contact a licensed professional waste disposal service. Dispose in a manner consistent with federal, state and local environmental regulations.

SECTION 14: TRANSPORT INFORMATION

DOT Shipping Name: Vanadium Pentoxide, Non-Fused Form

DOT UN Number: UN2862

DOT Hazard Class: Class 6.1

DOT Packing Group: PGIII

Reportable Quantity: 1000 lbs

IMDG Shipping Name: Vanadium Pentoxide, Non-Fused Form

IMDG UN Number: UN2862

IMDG Hazard Class: Class 6.1

IMDG Packing Group:	PGIII
Marine Pollutant:	Yes
IATA Shipping Name:	Vanadium Pentoxide, Non-Fused Form
IATA UN Number:	UN2862
IATA Hazard Class:	Class 6.1
IATA Packing Group:	PGIII

SECTION 15: REGULATORY INFORMATION

United States

Toxic Substance Control Act (TSCA) listed: Yes

Superfund Amendments and Reauthorization Act (SARA 302) listed: Yes

Superfund Amendments and Reauthorization Act (SARA 311/312) listed: No

Superfund Amendments and Reauthorization Act (SARA 313) listed: Yes

European Union

European Inventory of Existing Chemical Substances (EINECS): 215-239-8

GHS Classification in accordance with Regulation (EC) No 1272/2008: Yes

Canada

Canadian Domestic Substances List (DSL) listed: Yes

Canadian Non-Domestic Substances List (NDSL) listed: No

SECTION 16: OTHER INFORMATION

Date Prepared: 9/26/2022

The information above is presented in good faith. It is believed to be accurate and represents the best information currently available to us. However, we make no warranty with respect to such information and we assume no liability resulting from its use. The user should consider this information as a supplement to other information that may be available and make independent judgement to ensure proper use to protect the health and safety of employees and the environment. Pfaltz and Bauer shall not be held liable for any damage resulting from handling or from contact with the above product.