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SAFETY DATA SHEET

Identity: Vanadium Oxide Formula: V_2O_3

SECTION I - GENERAL INFORMATION

Manufacturer: Super Conductor Materials, Inc.

The information below is believed to be accurate and represents the best information available to Super Conductor Materials, Inc. However, SCM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 149.88

CAS #	OSHA PEL	ACGIH TLV	%
1314-34-7	0.05mg (V_2O_5/m^3)	0.05mg (V_2O_5/m^3)	0.0-100%

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A
Melting Point: 1970.00°C
Evaporation Rate: N/A
Solubility in water: Insoluble

Specific Gravity (H_2O=1): 4.87 at 18.0°C
Vapor Pressure (vs. air or mmHg): N/A
Vapor Density (vs. air=1): N/A
Flash Point: N/A

Appearance and odor: Black powder and pieces, no odor

SECTION IV - FIRE AND EXPLOSION HAZARD DATA:

Method Used: Non-flammable *Explosive Limits*: LEL: N/A UEL: N/A

Extinguishing Media:

Use suitable extinguishing agent for surrounding material and type of fire

Special Fire Fighting Procedures:

Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

Unusual Fire and Explosion Hazards:

−When heated to decomposition, vanadium oxide may emit toxic fumes of vanadium oxides.
−May ignite when heated in air and reacts slowly with moisture to form vanadium pentoxide

SECTION VI - REACTIVITY DATA

Stability: Stable
Conditions to Avoid (stability): None
Incompatibility: Aluminum powder and moisture

Hazardous Decomposition or Byproducts: Oxides of vanadium
Hazardous Polymerization: Will not occur
Conditions to avoid (hazardous polymerization): None

SECTION V - HEALTH HAZARD DATA

Routes of entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes Others? No

To the best of our knowledge the chemical, physical and toxicological properties of vanadium oxide have not been thoroughly investigated and recorded.

Vanadium compounds are considered to have variable toxicity. Vanadium compounds act chiefly as an irritant to the conjunctivae and respiratory tract. Acute and chronic exposure can give rise to conjunctivitis, rhinitis, reversible irritation of the respiratory tract, and to bronchitis, bronchospasms, and asthma-like diseases in more severe cases. Industrial exposure is mostly acute, seldom chronic. Human vanadium poisoning symptoms are for the most part restricted to the conjunctivae and respiratory system, no evidence being found of disturbances of the gastrointestinal tract, kidneys, blood or central nervous system. Acute poisoning in animals by ingestion of vanadium compounds causes nervous disturbances, paralysis of legs, respiratory failure, convulsions, bloody diarrhea and death. Poisoning by inhalation causes bleeding of the nose and acute bronchitis. (Sax, Dangerous Properties of Industrial Materials, eighth edition)

Signs and Symptoms of Overexposure:
Inhalation: May cause redness, coughing and dry throat. Vanadium toxicity may cause salivation, diarrhea, conjunctivitis, rhinit chis, and lowered body temperature, soreness of the pharynx, bronchitis and respiratory and cardiac failure.
Ingestion: May cause vomiting, diarrhea, convulsions, and coma.
Skin: May cause redness, itching, and inflammation.
Eye: May cause redness, itching and burning and watering.

Health Hazards (Acute and Chronic):
Inhalation:
Acute: May cause irritation of the respiratory tract; compounds may cause nasal bleeding and acute bronchitis. May cause vanadium toxicity
Chronic: Vanadium compounds may cause pneumonia and other pathologic symptoms (chronic symptoms of vanadium toxicity).

Ingestion:
Acute: POISON. May cause gastrointestinal disturbances.
Chronic: No chronic health effects recorded.

Skin:
Acute: May cause irritation.

Chronic: May cause dermatitis.

Eye:
Acute: May cause irritation.
Chronic: May cause conjunctivitis.

Target organs: May affect the kidneys, respiratory system, skin and eyes
Carcinogenicity: NTP? No IARC Monographs? No OSHA Regulated? No
Medical Condition Generally Aggravated by Exposure: Pre-existing respiratory disorder

Emergency and First Aid Procedures:

Inhalation: Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention

Ingestion: Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person

Skin: Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist

Eye: Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes nd seek medical attention.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:

Wear appropriate respiratory and protective equipment specified in section VIII. Isolate spill area, provide ventilation and extinguish sources of ignition. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

Waste disposal method:

Dispose of in accordance with state, local, and federal regulations.

Hazard Label Information:

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

Precautions:

Vanadium oxide reacts slowly in moisture to form vanadium pentoxide. Handle and store in a controlled, dry environment.

SECTION VIII - CONTROL MEASURES

Protective Equipment Summary (Hazard Label Information):
NIOSH approved respirator, impervious rubber gloves, safety glasses, clothes to prevent contact.

Ventilation:

Local Exhaust: Local exhaust ventilation may be necessary to control any air contaminants to within their PELs or TLVs during the use of this product.

Special: Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

Mechanical (General): Not recommended.

Work/Hygienic/Maintenance Practices:
Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established