SAFETY DATA SHEET

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ProChem inc.

SECTION 1 PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: **Vanadium (IV) Fluoride**

PRODUCT NUMBER: 3770

CAS NUMBER: 10049-16-8

SYNONYMS: Vanadium tetrafluoride

MANUFACTURER:

ProChem, Inc.
826 Roosevelt Road
Rockford, IL 61109

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IN CASE OF TRANSPORTATION EMERGENCY CONTACT CHEM-TREC: 1-800-424-9300

SECTION 2 HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Acute toxicity: oral	Category – 3
Acute toxicity: dermal	Category – 3
Acute toxicity: Inhalation; Dusts and Mists	Category – 3
Skin corrosion / irritation	Category – 1B
Serious eye damage / eye irritation	Category – 1

Pictogram



Signal Word **Danger**

Hazard Statements

H314	Causes severe skin burns and eye damage.
H300+H330	Fatal if swallowed or if inhaled
H301+H311+H331	Toxic if swallowed, in contact with skin, or if inhaled

Precautionary Phrases

P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P301+P310	IF SWALLOWED: Immediately calla a POISON CENTER or doctor/physician.
P303+P350	IF ON SKIN: Gently was 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 waster for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P501	Dispose of contents/container to an approved waste disposal plant.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Formula: VF_4

Molecular Weight: 126.94

CHEMICAL NAME	CAS#	%
Vanadium (IV) Fluoride	10049-16-8	99

SECTION 4 FIRST AID MEASURES

EYE EXPOSURE: In case of eye contact, rinse with plenty of water and seek medical attention if necessary.
SKIN EXPOSURE: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary.
INHALATION: Remove to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary.
INGESTION: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If conscious, wash out mouth with water. Get medical attention if necessary.

SECTION 5 FIREFIGHTING MEASURES

FLASH POINT: Product is not flammable
AUTO IGNITION TEMPERATURE: Not available
EXPLOSION LIMITS: Not available
EXTINGUISHING MEDIUM: Use fires fighting measures that suit the surrounding fire.
SPECIAL FIRE FIGHTING PROCEDURES: Wear self-contained, approved breathing apparatus and full protective clothing, including eye protection and boots.
HAZARDOUS COMBUSTION AND DECOMPOSITION PRODUCTS: Hydrogen Fluoride and Vanadium Oxides.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear all appropriate equipment when using this material. Ensure adequate ventilation. Avoid the formation of dust. Avoid breathing vapors, mist, gas, or dust.
ENVIRONMENTAL PRECAUTIONS: Prevent spillage from entering drains. Any release to the environment may be subject to federal/national or local reporting requirements.
METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Pick up and arrange disposal without creating dust. Sweep up and keep in suitable, closed containers for disposal. Clean surfaces thoroughly with water to remove residual contamination. Dispose of all waste and cleanup materials in accordance with regulations.

SECTION 7 HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Wear appropriate personal protective equipment. Use with adequate ventilation. Wash thoroughly after using. Keep container closed when not in use. Avoid formation of dusts and aerosols. Handle under dry protective gas.
CONDITIONS FOR SAFE STORAGE: Store in cool, dry, and well-ventilated area. Keep away from incompatible materials. Keep protected from water and moisture. Store under inert gas.

SECTION 8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE CONTROLS

Component	Exposure Limits	Basis	Entity
Vanadium (IV) Fluoride	2.5 mg/m^3	TLV	ACGIH

TLV: Threshold Limit Value over 8 hours of work.

EYE PROTECTION: Causes severe eye damage. Wear chemical safety glasses or goggles.
SKIN PROTECTION: Causes severe skin burns. Wear nitrile or rubber gloves, apron, or lab coat.
INHALATION: Fatal if inhaled.
VENTILATION: Provide local exhaust, preferably mechanical.
RESPIRATOR: Use an approved respirator.
INGESTION: Fatal if swallowed.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Green to brown solid
MOLECULAR WEIGHT: 126.94
BOILING POINT: No data available
MELTING POINT: 325°C (dec.)
SPECIFIC GRAVITY: 3.15
VAPOR DENSITY: No data available
SOLUBILITY IN WATER: Soluble

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Stable
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID: Excess heat. Exposure to moist air and water
INCOMPATIBILITY: Oxidizing agents, water, and moisture. Strong oxidizing agents, strong acids, strong bases, and strong reducing agents.
DECOMPOSITION PRODUCTS: Hydrogen Fluoride and vanadium Oxides.

SECTION 11 TOXICOLOGICAL DATA

ACUTE TOXICITY: Not available
CARCINOGENIC EFFECTS: No components of this product present at levels greater than or equal to 0.1% is identified a carcinogen.
MUTAGENIC EFFECTS: Not available
TETRATOGENIC EFFECTS: Not available

To the best of our knowledge the toxicological effects of this compound have not been fully investigated.

SECTION 12 ECOLOGICAL DATA

No data available.

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose of in according to local, state, and federal regulations.

SECTION 14 TRANSPORTATION DATA

DOT: UN2923
Corrosive solids, toxic, n.o.s.
(Vanadium (IV) fluoride)
CLASS 8 (6.1)
PG II

IATA: UN2923
Corrosive solid, toxic, n.o.s.
(Vanadium (IV) fluoride)
CLASS 8 (6.1)
PG II

Marine Pollutant: No

SECTION 15 REGULATORY INFORMATION

TSCA: Listed in the TSCA inventory

DSCL (EEC): Listed on the DSCL inventory

SARA 302/304: Not Listed

SARA 311/312: Not Listed

SARA (TITLE 313): Vanadium (IV) Fluoride

CALIFORNIA PROP. 65: Not Listed

WHMIS CANADA: Class D-1A: Very toxic material causing immediate and serious toxic effect. Class D-2B: Toxic material causing other toxic effect. Class E: Corrosive Material.

SECTION 16 OTHER INFORMATION

HMIS CLASSIFICATION:
Health: 3 Fire: 0 Reactivity Hazard: 2
NFPA RATING:
Health: 3 Flammability: 0 Instability: 1 Physical Hazards: N/A

CAS #: Chemical Abstracts Service Number
ACGIH: American Conference of Governmental Industrial Hygienists
TLV: Threshold Limit Value: Recommended airborne concentration limit set by ACGIH.
mg/m3: milligrams per cubic meter
UN: United Nations
n.o.s: Not Otherwise Specified
PG: Packing Group
TSCA: Toxic Substances Control Act
SARA: Superfund Amendments and Reauthorization Act
DSCL. Stands for the **Dangerous Substances Classification and Labelling** list (or Dangerous Substances Directive list). It comes from the European Union's former Dangerous Substances Directive (67/548/EEC).
WHMIS: Workplace Hazardous Materials Information System (WHMIS)
HMIS: Hazardous Materials Identification System
NFPA: National Fire Protection Association

DISCLAIMER: The information herein is believed to be accurate and reliable as of the date compiled. However, ProChem, Inc. makes no representation, warranty, or guarantee of any kind with respect to the information in this document or any use of the product based on the information.

DATE REVISED: 07/26
REVISION SUMMARY: Fax number removed. Section # 2 – updated category, added to Hazard Statement H301+H311+H331 and Precautionary Phrases – P304+P340. Section # 10 updated to condition to avoid and incompatibility statements. All other details in the document about the product remain unchanged. – Revised by EHS 7/26
EHS / SDS DEPT.