SECTION 1  PRODUCT AND COMPANY INFORMATION

PRODUCT NAME: Vanadium (II) Chloride
PRODUCT NUMBER: 3760
CAS NUMBER: 10580-52-6
SYNONYMS: Vanadous chloride, vanadium dichloride
MANUFACTURER:
Prochem, Inc.
826 Roosevelt Road
Rockford, IL  61109
PHONE: 815-398-1788
FAX: 815-398-1810
TOLL FREE: 800-795-8788

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

SECTION 2  HAZARDS IDENTIFICATION

CLASSIFICATION OF SUBSTANCE OR MIXTURE

Pictogram

Signal Word  Danger

Hazard Statements

H302  Harmful if swallowed.
H314  Causes severe skin burns and eye damage.

Precautionary Phrases

P260  Do not breathe dust or mist.
P264  Wash skin thoroughly after handling.
P270  Do not eat, drink, or smoke when using this product.
P280  Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.
P310  Immediately call a POISON CENTER or doctor/physician.
P363  Wash contaminated clothing before reuse.
P501  Dispose of contents/container to an approved waste disposal plant.
SECTION 2  HAZARDS IDENTIFICATION (Cont.)

HMIS CLASSIFICATION:
Health: 3  Fire: 0  Reactivity Hazard: 0

NFPA RATING:
Health: 3  Flammability: 0  Reactivity Hazard: 0

EYE CONTACT: Strong corrosive and irritating effect. Causes burns.

SKIN CONTACT: Corrosive effect on skin. Causes burns.

INHALATION: Corrosive and destructive to mucous membranes and respiratory tract.

INGESTION: Corrosive effect, burns, perforation.

CHRONIC TOXICITY: Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Inhalation may result in spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

SECTION 3  COMPOSITION / INFORMATION ON INGREDIENTS

Formula: VCl₂
Molecular Weight: 121.85

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS#</th>
<th>%</th>
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<tbody>
<tr>
<td>Vanadium (II) Chloride</td>
<td>10580-52-6</td>
<td>100</td>
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</table>

SECTION 4  FIRST AID MEASURES

EYE EXPOSURE: Immediately flush the eyes with copious amounts of water for several minutes. Assure flushing under eyelids. A victim may need assistance in keeping their eyelids open. Get immediate medical attention.

SKIN EXPOSURE: Wash affected area with water for several minutes. Remove contaminated clothes if necessary. Seek medical assistance immediately.

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. Seek medical assistance immediately.

SECTION 5  FIREFIGHTING MEASURES

FLASH POINT: Not available
AUTO IGNITION TEMPERATURE: Not available
EXPLOSION LIMITS: Not available

EXTINGUISHING MEDIUM: Use carbon dioxide, dry chemical powder, or appropriate foam. DO NOT USE WATER.

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 chloride gas and vanadium oxides

SECTION 6  ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Wear all appropriate equipment when using this material. Ensure adequate ventilation. Avoid formation of dust. Avoid breathing dust.

ENVIRONMENTAL PRECAUTIONS: Prevent spillage from entering drains or allowing to be released into the environment.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP: Absorb with inert material. Sweep up and place in well-marked container for disposal.

SECTION 7  HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: Wear appropriate personal protective equipment. Use with adequate ventilation. Do not get in eyes, on skin, or clothing. CORROSIVE. Causes burns.

CONDITIONS FOR SAFE STORAGE: Store in cool, dry, and well-ventilated area. Keep in a dry place. Store away from oxidizing agents.
SECTION 8  EXPOSURE CONTROLS AND PERSONAL PROTECTION

EXPOSURE CONTROLS

<table>
<thead>
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<th>Component</th>
<th>Exposure Limits</th>
<th>Basis</th>
<th>Entity</th>
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<tr>
<td>Vanadium (II) chloride</td>
<td>0.05 mg/m³</td>
<td>REL</td>
<td>NIOSH</td>
</tr>
<tr>
<td></td>
<td>0.05 mg/m³</td>
<td>PEL</td>
<td>OSHA</td>
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</table>

REL: Recommended Exposure Limit       PEL: Permissible Exposure Limit

EYE PROTECTION: Wear chemical safety glasses or goggles and face shield.
SKIN PROTECTION: Wear nitrile or rubber gloves, apron, or lab coat.
VENTILATION: Provide local exhaust, preferably mechanical.
RESPIRATOR: Use an approved respirator.
ADDITIONAL PROTECTION: Provide eyewash stations, quick-drench showers and washing facilities accessible to areas of use and handling.

SECTION 9  PHYSICAL AND CHEMICAL PROPERTIES

COLOR AND FORM: Light green crystalline powder
ODOR: Not available
MOLECULAR WEIGHT: 121.85
BOILING POINT: 1506° C
MELTING POINT: 1027° C
SPECIFIC GRAVITY: 3.09 gm/ml
SOLUBILITY: Decomposes

SECTION 10  STABILITY AND REACTIVITY

STABILITY: Stable
HAZARDOUS POLYMERIZATION: Will not occur
CONDITIONS TO AVOID: Moisture and humidity
INCOMPATIBILITY: Oxidizing agents, water, and moisture
DECOMPOSITION PRODUCTS: Hydrogen Chloride and vanadium oxides

SECTION 11  TOXICOLOGICAL DATA

ACUTE TOXICITY: LD50 Oral – 540 mg/kg
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
RTECS: YW1575000

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

UN3260  Corrosive solid, acidic, inorganic, n.o.s.
(Vanadium (II) Chloride)
CLASS 8
PG II
SECTION 15    REGULATORY INFORMATION

TSCA: No data
SARA 311/312: Acute Health Hazard
SARA (TITLE 313): Vanadium (II) chloride
PENNSYLVANIA RIGHT TO KNOW: Vanadium (II) chloride
NEW JERSEY RIGHT TO KNOW: Vanadium (II) chloride
CALIFORNIA PROP. 65: Not Listed
WHMIS CANADA: Not Listed

SECTION 16    OTHER INFORMATION

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 PREPARED: 09/14