

**Safety Data Sheet**  
according to OSHA HCS

Printing date 07/30/2016

Reviewed on 07/30/2016

**1 Identification**

- **Product name**
- **Trade name:** Vanadium(III) acetylacetonate, 98%
- **Item number:** 23-2250
- **CAS Number:**  
13476-99-8
- **EC number:**  
235-150-8
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
Strem Chemicals, Inc.  
7 Mulliken Way  
NEWBURYPORT, MA 01950  
USA  
info@strem.com
- **Information department:** Technical Department
- **Emergency telephone number:**  
EMERGENCY: CHEMTREC: + 1 (800) 424-9300  
During normal opening times: +1 (978) 499-1600

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

- **Label elements**
- **GHS label elements**  
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS06

- **Signal word** Danger
- **Hazard-determining components of labeling:**  
Vanadium(III) acetylacetonate, 98%
- **Hazard statements**  
H301 Toxic if swallowed.
- **Precautionary statements**  
P231 Handle under inert gas.  
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.  
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P403+P233 Store in a well-ventilated place. Keep container tightly closed.  
P422 Store contents under inert gas.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 2

Fire = 0

Reactivity = 0

· **Other hazards**

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

## 3 Composition/information on ingredients

· **Chemical characterization: Substances**

· **CAS No. Description**

13476-99-8 Vanadium(III) acetylacetonate, 98%

· **Identification number(s)**

· **EC number:** 235-150-8

## 4 First-aid measures

· **Description of first aid measures**

· **General information:**

Immediately remove any clothing soiled by the product.

In case of irregular breathing or respiratory arrest provide artificial respiration.

· **After inhalation:** In case of unconsciousness place patient stably in side position for transportation.

· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.

· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.

· **After swallowing:** Do not induce vomiting; immediately call for medical help.

· **Information for doctor:**

· **Most important symptoms and effects, both acute and delayed** No further relevant information available.

· **Indication of any immediate medical attention and special treatment needed**

No further relevant information available.

## 5 Fire-fighting measures

· **Extinguishing media**

· **Suitable extinguishing agents:**

CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

· **Special hazards arising from the substance or mixture** No further relevant information available.

· **Advice for firefighters**

· **Protective equipment:** No special measures required.

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## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** No special measures required.
- **Methods and material for containment and cleaning up:**  
Dispose contaminated material as waste according to item 13.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

## 7 Handling and storage

- **Handling:** Handle under inert gas.
- **Precautions for safe handling**  
Thorough dedusting.  
Open and handle receptacle with care.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:** Store contents under inert gas.
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Store in cool, dry conditions in well sealed receptacles.
- **Specific end use(s)** No further relevant information available.

## 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.  
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

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**· Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

**· Eye protection:** Safety glasses

## 9 Physical and chemical properties

**· Information on basic physical and chemical properties**
**· General Information**
**· Appearance:**
**Form:** Crystalline

**Color:** Brown

**· Odor:** Odorless

**· Odor threshold:** Not determined.

**· pH-value:** Not applicable.

**· Change in condition**
**Melting point/Melting range:** 178 °C (352 °F)

**Boiling point/Boiling range:** subl. (170 /0.0 °C (subl. (338 /32 °F)

**· Flash point:** Not applicable.

**· Flammability (solid, gaseous):** Not determined.

**· Ignition temperature:**
**Decomposition temperature:** Not determined.

**· Auto igniting:** Not determined.

**· Danger of explosion:** Product does not present an explosion hazard.

**· Explosion limits:**
**Lower:** Not determined.

**Upper:** Not determined.

**· Vapor pressure:** no data hPa

**· Density:** Not determined.

**· Relative density** Not determined.

**· Vapor density** Not applicable.

**· Evaporation rate** Not applicable.

**· Solubility in / Miscibility with**
**Water:** Insoluble.

**· Partition coefficient (n-octanol/water):** Not determined.

**· Viscosity:**
**Dynamic:** Not applicable.

**Kinematic:** Not applicable.

**· Solvent content:**
**Organic solvents:** 0.0 %

**VOC content:** 0.0 g/l / 0.00 lb/gl

**Solids content:** 100.0 %

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· **Other information** No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

Substance is not listed.

· **NTP (National Toxicology Program)**

Substance is not listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

Substance is not listed.

## 12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.
- **Additional ecological information:**
- **General notes:** Not known to be hazardous to water.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

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### 13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:**  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |   |  |
|---|--|
| · <b>UN-Number</b>  | UN2811   |
| · <b>DOT, IMDG, IATA</b>  |  |
| · <b>UN proper shipping name</b>  | Toxic solids, organic, n.o.s.  |
| · <b>DOT, IATA</b>  | TOXIC SOLID, ORGANIC, N.O.S.   |
| · <b>IMDG</b>   |  |
| · <b>Transport hazard class(es)</b>   |  |
| · <b>DOT</b>  |  |
|   |  |
| · <b>Class</b>  | 6.1 Toxic substances   |
| · <b>Label</b>  | 6.1  |
| <hr style="border-top: 1px dashed #000;"/>  |  |
| · <b>IMDG, IATA</b>   |  |
|  |  |
| · <b>Class</b>  | 6.1 Toxic substances   |
| · <b>Label</b>  | 6.1  |
| · <b>Packing group</b>  | III  |
| · <b>DOT, IMDG, IATA</b>  |  |
| · <b>Environmental hazards:</b>   |  |
| · <b>Marine pollutant:</b>  | No   |
| · <b>Special precautions for user</b>   | Not applicable.  |
| · <b>EMS Number:</b>  | F-A,S-A  |
| · <b>Stowage Category</b>   | A  |
| · <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>    | Not applicable.  |
| · <b>Transport/Additional information:</b>  |  |
| · <b>DOT</b>  |  |
| · <b>Quantity limitations</b>   | On passenger aircraft/rail: 100 kg<br>On cargo aircraft only: 200 kg |

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- |                                   |  |
|-----------------------------------|--|
| · <b>IMDG</b>                     |  |
| · <b>Limited quantities (LQ)</b>  | 5 kg   |
| · <b>Excepted quantities (EQ)</b> | Code: E1   |
|                                   | Maximum net quantity per inner packaging: 30 g   |
|                                   | Maximum net quantity per outer packaging: 1000 g |
| · <b>UN "Model Regulation":</b>   | UN 2811 TOXIC SOLIDS, ORGANIC, N.O.S., 6.1, III  |

## 15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
- Sara

### · Section 355 (extremely hazardous substances):

Substance is not listed.

### · Section 313 (Specific toxic chemical listings):

Substance is not listed.

### · TSCA (Toxic Substances Control Act):

Substance is listed.

### · Proposition 65

#### · Chemicals known to cause cancer:

Substance is not listed.

#### · Chemicals known to cause reproductive toxicity for females:

Substance is not listed.

#### · Chemicals known to cause reproductive toxicity for males:

Substance is not listed.

#### · Chemicals known to cause developmental toxicity:

Substance is not listed.

### · Carcinogenic categories

#### · EPA (Environmental Protection Agency)

Substance is not listed.

#### · TLV (Threshold Limit Value established by ACGIH)

Substance is not listed.

#### · NIOSH-Ca (National Institute for Occupational Safety and Health)

Substance is not listed.

### · GHS label elements

The substance is classified and labeled according to the Globally Harmonized System (GHS).

### · Hazard pictograms



GHS06

### · Signal word Danger

### · Hazard-determining components of labeling:

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· **Hazard statements**

H301 Toxic if swallowed.

· **Precautionary statements**

P231 Handle under inert gas.

P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P422 Store contents under inert gas.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Technical Department.

· **Contact:** Technical Director

· **Date of preparation / last revision** 07/30/2016 / -

· **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Acute Tox. 3: Acute toxicity, Hazard Category 3