

SAFETY DATA SHEET

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SECTION 1. IDENTIFICATION

Product Name: Vanadium Sulfate Solution

Product Number: All applicable American Elements product codes, e.g. V-SAT-02-SOL , V-SAT-03-SOL , V-SAT-04-SOL , V-SAT-05-SOL

CAS #: 27774-13-6

Relevant identified uses of the substance: Scientific research and development

Supplier details:

American Elements
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Los Angeles, CA 90024
Tel: +1 310-208-0551
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Emergency telephone number:

Domestic, North America: +1 800-424-9300
International: +1 703-527-3887

SECTION 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS06 Skull and crossbones

Acute Tox. 3 H301 Toxic if swallowed.

Acute Tox. 3 H331 Toxic if inhaled.

GHS08 Health hazard

STOT RE 2 H373 May cause damage to the central nervous system, the liver and the digestive system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Hazards not otherwise classified

No data available.

GHS label elements

The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms



Signal word

Danger

Hazard statements

H301+H331 Toxic if swallowed or if inhaled.

H373

May cause damage to the central nervous system, the liver and the digestive system through prolonged or repeated exposure.

Route of exposure: Oral,

Inhalative.

Precautionary statements

P260

Do not breathe dust/fume/gas/mist/vapors/spray.

P261

Avoid breathing dust/fume/gas/mist/vapors/spray.

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

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P405

Store locked up.

P501

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

WHMIS classification

D1A - Very toxic material causing immediate and serious toxic effects

D2B - Toxic material causing other toxic effects

E - Corrosive material

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

Health (acute effects) = 3

Flammability = 0

Physical Hazard = 2

Other hazards

Results of PBT and vPvB assessment:

PBT:

N/A.

vPvB:

N/A.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances

CAS No. / Substance Name:

27774-13-6 Vanadium(IV) sulfate oxide solution

7732-18-5 Water

SECTION 4. FIRST AID MEASURES

Description of first aid measures

General information

Immediately remove any clothing soiled by the product.

Remove breathing apparatus only after contaminated clothing has been completely removed.

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

If inhaled:

Supply fresh air. If not breathing, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

In case of skin contact:

Immediately wash with soap and water; rinse thoroughly.

Seek immediate medical advice.

In case of eye contact:

Rinse opened eye for several minutes under running water. Consult a physician.

If swallowed:

Do not induce vomiting; immediately call for medical help.

Information for doctor

Most important symptoms and effects, both acute and delayed

Causes severe skin burns.

Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

Product is not flammable. Use fire-fighting measures that suit the surrounding fire.

Special hazards arising from the substance or mixture

If this product is involved in a fire, the following can be released:

Toxic metal oxide fume

Carbon dioxide

Advice for firefighters

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Environmental precautions:

Do not allow material to be released to the environment without official permits.

Methods and material for containment and cleanup:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose of contaminated material as waste according to section 13.

Ensure adequate ventilation.

Prevention of secondary hazards:

No special measures required.

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.

SECTION 7. HANDLING AND STORAGE

Handling

Precautions for safe handling
Handle under dry protective gas.
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure adequate ventilation.
Open and handle container with care.
Information about protection against explosions and fires:
The product is not flammable
Conditions for safe storage, including any incompatibilities
Storage
Requirements to be met by storerooms and receptacles:
No special requirements.
Information about storage in one common storage facility:
Store away from oxidizing agents.
Further information about storage conditions:
Store under dry inert gas.
Keep container tightly sealed.
Store in cool, dry conditions in well-sealed containers.
Specific end use(s)
No information available.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure controls
Personal protective equipment
Follow typical general protective and industrial hygiene measures for handling chemicals.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
Avoid contact with the eyes and skin.
Breathing equipment:
Use self-contained respiratory protective device in emergency situations.
Protection of hands:
Impervious gloves
Inspect gloves prior to use.
Suitability of gloves should be determined both by material and quality, the latter of which may vary by manufacturer.
Eye protection:
Tightly sealed goggles
Full face protection
Body protection:
Protective work clothing

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties
Appearance:
Form: Liquid
Odor threshold: No data available.
pH: No data available.

Melting point/range: No data available.
Boiling point/range: No data available.
Sublimation temperature / start: No data available.
Flash point: No data available.
Flammability (solid, gas):
No data available.
Ignition temperature: No data available.
Decomposition temperature: No data available.
Auto igniting: No data available.
Danger of explosion: Product does not present an explosion hazard.
Explosion limits:
Lower: No data available.
Upper: No data available.
Vapor pressure: No data available.
Relative density
No data available.
Vapor density
No data available.
Evaporation rate
No data available.
Viscosity:
Dynamic: No data available.
Kinematic: No data available.
Other information
No information available.

SECTION 10. STABILITY AND REACTIVITY

Reactivity
No data available.
Chemical stability
Stable under recommended storage conditions.
Thermal decomposition / conditions to be avoided:
Decomposition will not occur if used and stored according to specifications.
Possibility of hazardous reactions
No dangerous reactions known
Conditions to avoid
No information available.
Incompatible materials:
Oxidizing agents
Hazardous decomposition products:
Toxic metal oxide fume
Carbon dioxide

SECTION 11. TOXICOLOGICAL INFORMATION

Information on toxicological effects
Acute toxicity:
Toxic if inhaled.
Toxic if swallowed.
Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation

of esophagus and stomach.

LD/LC50 values that are relevant for classification:

No data

Skin irritation or corrosion:

Causes severe skin burns.

Eye irritation or corrosion:

Causes serious eye damage.

Sensitization:

No sensitizing effects known.

Germ cell mutagenicity:

N/A

Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:

N/A

Specific target organ system toxicity - repeated exposure:

May cause damage to the central nervous system, the liver and the digestive system through prolonged or repeated exposure. Route of exposure: Oral, Inhalative.

Specific target organ system toxicity - single exposure:

N/A

Aspiration hazard:

N/A

Subacute to chronic toxicity:

N/A

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

SECTION 12. ECOLOGICAL INFORMATION

Toxicity

Aquatic toxicity:

No information available.

Persistence and degradability:

No information available.

Bioaccumulative potential:

No information available.

Mobility in soil:

No information available.

Ecotoxicological effects:

Remark:

Very toxic for aquatic organisms

Additional ecological information:

General notes:

Do not allow material to be released to the environment without official permits.

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

May cause long lasting harmful effects to aquatic life.

Avoid transfer into the environment.

Very toxic for aquatic organisms

Results of PBT and vPvB assessment:

PBT:

N/A.
vPvB:
N/A.
Other adverse effects
No information available.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste treatment methods
Recommendation:
Consult state, local or national regulations to ensure proper disposal.
Uncleaned packagings:
Recommendation:
Disposal must be made according to official regulations.

SECTION 14. TRANSPORT INFORMATION

UN-Number
DOT, IMDG, IATA
UN2922
UN proper shipping name
DOT
Corrosive liquids, toxic, n.o.s. (Vanadyl sulfate solution)
IMDG, IATA
CORROSIVE LIQUID, TOXIC, N.O.S. (Vanadyl sulfate solution)
Transport hazard class(es)
DOT
Class
8 Corrosive substances.
Label
8+6.1
Class
8 (CT1) Corrosive substances
Label
8+6.1
IMDG, IATA
Class
8 Corrosive substances.
Label
8+6.1
Packing group
DOT, IMDG, IATA
II
Environmental hazards:
Environmentally hazardous substance, liquid
Special precautions for user
Warning: Corrosive substances
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code
N/A.
Transport/Additional information:
DOT

Marine Pollutant (DOT):

No

UN "Model Regulation":

UN2922, Corrosive liquids, toxic, n.o.s. (Vanadyl sulfate solution), 8 (6.1), II

SECTION 15. REGULATORY INFORMATION

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

SARA Section 313 (specific toxic chemical listings)

27774-13-6 Vanadyl sulfate

California Proposition 65

Prop 65 - Chemicals known to cause cancer

Substance is not listed.

Prop 65 - Developmental toxicity

Substance is not listed.

Prop 65 - Developmental toxicity, female

Substance is not listed.

Prop 65 - Developmental toxicity, male

Substance is not listed.

Information about limitation of use:

For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.

Substance is not listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)

Substance is not listed.

Chemical safety assessment:

A Chemical Safety Assessment has not been carried out.

SECTION 16. OTHER INFORMATION

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH). The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. American Elements shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. COPYRIGHT 1997-2018 AMERICAN ELEMENTS. LICENSED GRANTED TO MAKE UNLIMITED PAPER COPIES FOR INTERNAL USE ONLY.