SAFETY DATA SHEET

Sodium Selenite / Vitamin E Injection Formulation

Version 4.0  Revision Date: 09/13/2019  SDS Number: 895430-00007  Date of last issue: 04/24/2019  Date of first issue: 09/21/2016

SECTION 1. IDENTIFICATION

Product name : Sodium Selenite / Vitamin E Injection Formulation

Manufacturer or supplier’s details
Company name of supplier : Merck & Co., Inc
Address : 2000 Galloping Hill Road
           Kenilworth - New Jersey - U.S.A.  07033
Telephone : 908-740-4000
Telefax : 908-735-1496
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin sensitization : Category 1
Specific target organ toxicity - repeated exposure : Category 1 (Kidney, Blood, Nervous system, Endocrine system, Skin)

GHS label elements
Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H302 + H332 Harmful if swallowed or if inhaled.
H317 May cause an allergic skin reaction.
H372 Causes damage to organs (Kidney, Blood, Nervous system, Endocrine system, Skin) through prolonged or repeated exposure.

Precautionary Statements : Prevention:
P260 Do not breathe mist or vapors.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing must not be allowed out of the workplace.
P280 Wear protective gloves.
SAFETY DATA SHEET

Sodium Selenite / Vitamin E Injection Formula-tion

Response:
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P314 Get medical advice/ attention if you feel unwell.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>7695-91-2</td>
<td>5.15</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>2.19</td>
</tr>
<tr>
<td>Sodium selenite</td>
<td>10102-18-8</td>
<td>0.35 - 1.13</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
If not breathing, give artificial respiration.
If breathing is difficult, give oxygen.
Get medical attention if symptoms occur.

In case of skin contact : In case of contact, immediately flush skin with plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.

In case of eye contact : Flush eyes with water as a precaution.
Get medical attention if irritation develops and persists.

If swallowed : If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.
Get medical attention.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person.
Sodium Selenite / Vitamin E Injection Formulation

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water spray
Alcohol-resistant foam
Carbon dioxide (CO2)
Dry chemical

Unsuitable extinguishing media: None known.

Specific hazards during fire fighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Metal oxides
Carbon oxides

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Use water spray to cool unopened containers. Remove undamaged containers from fire area if it is safe to do so. Evacuate area.

Special protective equipment for fire-fighters: In the event of fire, wear self-contained breathing apparatus. Use personal protective equipment.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Follow safe handling advice and personal protective equipment recommendations.

Environmental precautions: Discharge into the environment must be avoided. Prevent further leakage or spillage if safe to do so. Prevent spreading over a wide area (e.g., by containment or oil barriers). Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material. For large spills, provide diking or other appropriate containment to keep material from spreading. If diked material can be pumped, store recovered material in appropriate container. Clean up remaining materials from spill with suitable absorbent. Local or national regulations may apply to releases and disposal of this material, as well as those materials and items.
employed in the cleanup of releases. You will need to determine which regulations are applicable. Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

SECTION 7. HANDLING AND STORAGE

Technical measures : See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation : If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling : Do not get on skin or clothing.
Do not breathe vapors or spray mist.
Do not swallow.
Avoid contact with eyes.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.
Keep tightly closed.
Keep in a cool, well-ventilated place.
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Explosives
Gases

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>7695-91-2</td>
<td>TWA</td>
<td>5000 ug/m³ (OEB 1)</td>
<td>Internal</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>TWA</td>
<td>10 ppm</td>
<td>US WEEL</td>
</tr>
<tr>
<td>Sodium selenite</td>
<td>10102-18-8</td>
<td>TWA</td>
<td>20 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>200 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.2 mg/m³ (selenium)</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.2 mg/m³ (selenium)</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.2 mg/m³ (selenium)</td>
<td>NIOSH REL</td>
</tr>
</tbody>
</table>

Engineering measures : Use appropriate engineering controls and manufacturing
technologies to control airborne concentrations (e.g., dripless quick connections).

All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment. Containment technologies suitable for controlling compounds are required to control at source and to prevent migration of the compound to uncontrolled areas (e.g., open-face containment devices).

Minimize open handling.

**Personal protective equipment**

**Respiratory protection**: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

**Hand protection**

**Material**: Chemical-resistant gloves

**Remarks**: Consider double gloving.

**Eye protection**: Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

**Skin and body protection**: Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing.

**Hygiene measures**: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**
SAFETY DATA SHEET

Sodium Selenite / Vitamin E Injection Formulation

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Appearance</strong></td>
<td>Viscous liquid</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>Amber</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Melting point/freezing point</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Initial boiling point and boiling range</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Flammability (liquids)</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Upper explosion limit / Upper flammability limit</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Lower explosion limit / Lower flammability limit</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Relative vapor density</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Solubility(ies)</strong></td>
<td></td>
</tr>
<tr>
<td>Water solubility</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Decomposition temperature</strong></td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Viscosity</strong></td>
<td></td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>Explosive properties</strong></td>
<td>Not explosive</td>
</tr>
<tr>
<td><strong>Oxidizing properties</strong></td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
<tr>
<td><strong>Particle size</strong></td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
SECTION 10. STABILITY AND REACTIVITY

Reactivity: Not classified as a reactivity hazard.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions: Can react with strong oxidizing agents.
Conditions to avoid: None known.
Incompatible materials: Oxidizing agents
Hazardous decomposition products: No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure
Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity
Harmful if swallowed or if inhaled.

Product:
Acute oral toxicity: Acute toxicity estimate: 614.32 mg/kg
Method: Calculation method
Acute inhalation toxicity: Acute toxicity estimate: 4.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:
(dl)-a-Tocopheryl acetate:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Acute dermal toxicity: LD50 (Rat): > 3,000 mg/kg
Assessment: The substance or mixture has no acute dermal toxicity

Benzyl alcohol:
Acute oral toxicity: LD50 (Rat): 1,620 mg/kg
Acute inhalation toxicity: LC50 (Rat): > 4.178 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403

Sodium selenite:
Acute oral toxicity: LD50 (Rat): 7 mg/kg
Acute inhalation toxicity:  
LC50 (Rat): > 0.052 - 0.51 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: OECD Test Guideline 403

Skin corrosion/irritation  
Not classified based on available information.

Components:

(dl)-a-Tocopheryl acetate:  
Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation

Benzyl alcohol:  
Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation

Sodium selenite:  
Method: OECD Test Guideline 439  
Result: Skin irritation

Serious eye damage/eye irritation  
Not classified based on available information.

Components:

(dl)-a-Tocopheryl acetate:  
Species: Rabbit  
Result: No eye irritation  
Method: OECD Test Guideline 405

Benzyl alcohol:  
Species: Rabbit  
Result: Irritation to eyes, reversing within 21 days  
Method: OECD Test Guideline 405

Sodium selenite:  
Result: Irritation to eyes, reversing within 21 days  
Method: OECD Test Guideline 437

Respiratory or skin sensitization

Skin sensitization  
May cause an allergic skin reaction.
Respiratory sensitization
Not classified based on available information.

Components:

<table>
<thead>
<tr>
<th>(dl)-a-Tocopheryl acetate:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type</td>
<td>Draize Test</td>
</tr>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Humans</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Benzyl alcohol:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type</td>
<td>Maximization Test</td>
</tr>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 406</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sodium selenite:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type</td>
<td>Local lymph node assay (LLNA)</td>
</tr>
<tr>
<td>Routes of exposure</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 429</td>
</tr>
<tr>
<td>Result</td>
<td>positive</td>
</tr>
</tbody>
</table>

Assessment: Probability or evidence of skin sensitization in humans

Germ cell mutagenicity
Not classified based on available information.

Components:

<table>
<thead>
<tr>
<th>(dl)-a-Tocopheryl acetate:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Test Type: Chromosome aberration test in vitro</td>
</tr>
<tr>
<td></td>
<td>Method: OECD Test Guideline 473</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

Test Type: Bacterial reverse mutation assay (AMES) |
Method: OECD Test Guideline 471 |
Result: negative

| Genotoxicity in vivo      | Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay) |
|----------------------------| Species: Mouse |
|                           | Application Route: Ingestion |
|                           | Result: negative |

<table>
<thead>
<tr>
<th>Benzyl alcohol:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Genotoxicity in vitro</td>
<td>Test Type: Bacterial reverse mutation assay (AMES)</td>
</tr>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>
Genotoxicity in vivo: Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative

Sodium selenite:
Genotoxicity in vitro: Test Type: In vitro mammalian cell gene mutation test  
Method: OECD Test Guideline 476  
Result: positive

Genotoxicity in vivo: Test Type: Chromosome aberration test in vitro  
Method: OECD Test Guideline 473  
Result: positive

Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)  
Method: OECD Test Guideline 471  
Result: negative

Genotoxicity in vivo: Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)  
Species: Mouse  
Application Route: Intraperitoneal injection  
Result: negative

Germ cell mutagenicity - Assessment: Weight of evidence does not support classification as a germ cell mutagen.

Carcinogenicity: Not classified based on available information.

Components:
(dl)-a-Tocopheryl acetate:
Species: Rat  
Application Route: Ingestion  
Exposure time: 104 weeks  
Result: negative

Benzyl alcohol:
Species: Mouse  
Application Route: Ingestion  
Exposure time: 103 weeks  
Method: OECD Test Guideline 451  
Result: negative

Sodium selenite:
Species: Rat  
Application Route: Ingestion  
Exposure time: 1 Years
IARC  No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA  No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

NTP  No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity
Not classified based on available information.

Components:

(dl)-a-Tocopheryl acetate:
Effects on fertility  Test Type: Reproduction/Developmental toxicity screening test  Species: Rat  Application Route: Ingestion  Result: negative

Effects on fetal development  Test Type: Embryo-fetal development  Species: Rabbit  Application Route: Ingestion  Result: negative

Benzyl alcohol:
Effects on fertility  Test Type: Fertility/early embryonic development  Species: Rat  Application Route: Ingestion  Result: negative  Remarks: Based on data from similar materials

Effects on fetal development  Test Type: Embryo-fetal development  Species: Mouse  Application Route: Ingestion  Result: negative

Sodium selenite:
Effects on fetal development  Test Type: Embryo-fetal development  Species: Mouse  Application Route: Ingestion  Result: negative

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Causes damage to organs (Kidney, Blood, Nervous system, Endocrine system, Skin) through prolonged or repeated exposure.
Components:

Sodium selenite:
- Routes of exposure: Ingestion
- Target Organs: Kidney, Blood, Nervous system, Endocrine system, Skin
- Assessment: Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.
- Remarks: Based on harmonised classification in EU regulation 1272/2008, Annex VI

Repeated dose toxicity

Components:

(dl)-a-Tocopheryl acetate:
- Species: Rat
- NOAEL: 500 mg/kg
- Application Route: Ingestion
- Exposure time: 90 Days

Benzyl alcohol:
- Species: Rat
- NOAEL: 1.072 mg/l
- Application Route: inhalation (dust/mist/fume)
- Exposure time: 28 Days
- Method: OECD Test Guideline 412

Sodium selenite:
- Species: Rat
- NOAEL: 0.4 mg/kg
- LOAEL: 0.8 mg/kg
- Application Route: Ingestion
- Exposure time: 13 Weeks

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:

Sodium selenite:
- Inhalation: Target Organs: Respiratory system
  Symptoms: bronchospasm, bronchitis, Edema
  Target Organs: Cardio-vascular system
  Symptoms: tachycardia, Lowered blood pressure
  Target Organs: Digestive organs
  Symptoms: Nausea, Vomiting, stomach discomfort
- Ingestion: Target Organs: Nervous system
  Symptoms: Neurological disorders
  Target Organs: Endocrine system
  Target Organs: Skin
Ecotoxicity

Components:

**(dl)-a-Tocopheryl acetate:**

- **Toxicity to fish:** LC50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
  - Exposure time: 96 h
  - Method: OECD Test Guideline 203

- **Toxicity to daphnia and other aquatic invertebrates:** EC50 (Daphnia magna (Water flea)): > 100 mg/l
  - Exposure time: 48 h
  - Method: OECD Test Guideline 202

- **Toxicity to algae/aquatic plants:** ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201
  
  NOEC (Pseudokirchneriella subcapitata (green algae)): >= 100 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201

- **Toxicity to fish (Chronic toxicity):** NOEC (Oncorhynchus mykiss (rainbow trout)): 100 mg/l
  - Exposure time: 28 d

- **Toxicity to microorganisms:** EC50: > 927 mg/l
  - Exposure time: 30 min
  - Method: ISO 8192

**Benzyl alcohol:**

- **Toxicity to fish:** LC50 (Pimephales promelas (fathead minnow)): 460 mg/l
  - Exposure time: 96 h

- **Toxicity to daphnia and other aquatic invertebrates:** EC50 (Daphnia magna (Water flea)): 230 mg/l
  - Exposure time: 48 h
  - Method: OECD Test Guideline 202

- **Toxicity to algae/aquatic plants:** EC50 (Pseudokirchneriella subcapitata (green algae)): 770 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201
  
  NOEC (Pseudokirchneriella subcapitata (green algae)): 310 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201

- **Toxicity to daphnia and other aquatic invertebrates:** NOEC (Daphnia magna (Water flea)): 51 mg/l
aquatic invertebrates (Chronic toxicity)

Sodium selenite:

Toxicity to fish
- LC50: 7.2 mg/l
- Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates
- EC50 (Daphnia magna (Water flea)): 1.2 mg/l
- Exposure time: 48 h

Toxicity to algae/aquatic plants
- ER50 (Pseudokirchneriella subcapitata (green algae)): 96.9 mg/l
- Exposure time: 72 h
- Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (green algae)): 10.0 mg/l
- Exposure time: 72 h
- Method: OECD Test Guideline 201

Toxicity to fish (Chronic toxicity)
- NOEC (Lepomis macrochirus (Bluegill sunfish)): 0.022 mg/l
- Exposure time: 258 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
- NOEC: 0.22 mg/l
- Exposure time: 24 d

Toxicity to microorganisms
- EC50: 180 mg/l
- Exposure time: 3 h
- Method: OECD Test Guideline 209

Persistence and degradability

Components:

(dl)-a-Tocopheryl acetate:

Biodegradability
- Result: Not readily biodegradable.
- Biodegradation: 21.7 - 31 %
- Exposure time: 28 d
- Method: OECD Test Guideline 301C

Benzyl alcohol:

Biodegradability
- Result: Readily biodegradable.
- Biodegradation: 92 - 96 %
- Exposure time: 14 d

Bioaccumulative potential

Components:

Benzyl alcohol:

Partition coefficient: n-octanol/water
- log Pow: 1.05
SAFETY DATA SHEET

Sodium Selenite / Vitamin E Injection Formula-
tion

Mobility in soil
No data available

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
- Waste from residues: Dispose of in accordance with local regulations.
- Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.
  If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
Not regulated as a dangerous good

IATA-DGR
Not regulated as a dangerous good

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable for product as supplied.

Domestic regulation

49 CFR
- UN/ID/NA number: UN 3082
- Proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
  (Sodium selenite)
- Class: 9
- Packing group: III
- Labels: CLASS 9
- ERG Code: 171
- Marine pollutant: no
- Remarks: THE ABOVE INFORMATION ONLY APPLIES TO PACKAGE SIZES WHERE THE HAZARDOUS SUBSTANCE MEETS THE REPORTABLE QUANTITY.

Special precautions for user
The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.
SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium selenite</td>
<td>10102-18-8</td>
<td>100</td>
<td>8849</td>
</tr>
<tr>
<td>Sodium selenite</td>
<td>10102-18-8</td>
<td>100</td>
<td>8849</td>
</tr>
</tbody>
</table>

SARA 304 Extremely Hazardous Substances Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium selenite</td>
<td>10102-18-8</td>
<td>100</td>
<td>8849</td>
</tr>
</tbody>
</table>

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component TPQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium selenite</td>
<td>10102-18-8</td>
<td>100</td>
</tr>
</tbody>
</table>

*: Solid in the molten or powdered form (particles < 100 microns), in solution, or meeting the NFPA reactivity criteria.

SARA 311/312 Hazards:
- Acute toxicity (any route of exposure)
- Respiratory or skin sensitization
- Specific target organ toxicity (single or repeated exposure)

SARA 313:
- The following components are subject to reporting levels established by SARA Title III, Section 313:

  Sodium selenite 10102-18-8 0.35 - 1.13 %

US State Regulations

Pennsylvania Right To Know

<table>
<thead>
<tr>
<th>Water</th>
<th>7732-18-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol sorbitan monooleate</td>
<td>9005-65-6</td>
</tr>
<tr>
<td>Polyethylene glycol castor oil</td>
<td>61791-12-6</td>
</tr>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>7695-91-2</td>
</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
</tr>
<tr>
<td>Sodium selenite</td>
<td>10102-18-8</td>
</tr>
</tbody>
</table>

California List of Hazardous Substances

| Sodium selenite | 10102-18-8 |

California Permissible Exposure Limits for Chemical Contaminants

| Sodium selenite | 10102-18-8 |

The ingredients of this product are reported in the following inventories:

AICS: not determined

DSL: not determined

IECSC: not determined
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Special hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS® IV:

- **FLAMMABILITY**: 1
- **PHYSICAL HAZARD**: 0
- **HEALTH**: 3

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations:

- ACGIH: USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL: USA. NIOSH Recommended Exposure Limits
- OSHA Z-1: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- US WEEL: USA. Workplace Environmental Exposure Levels (WEEL)
- ACGIH / TWA: 8-hour, time-weighted average
- NIOSH REL / TWA: Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
- OSHA Z-1 / TWA: 8-hour time weighted average
- US WEEL / TWA: 8-hr TWA

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; Ems - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Pre
SAFETY DATA SHEET

Sodium Selenite / Vitamin E Injection Formula-
tion

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Date of first issue: 09/21/2016


Revision Date: 09/13/2019

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.

US / Z8