SAFETY DATA SHEET

Sodium Selenite / Vitamin E Injection Formulation

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Sodium Selenite / Vitamin E Injection Formulation

Manufacturer or supplier’s details
Company : MSD
Address : Rua Coronel Bento Soares, 530
          Cruzeiro - Sao Paulo - Brazil  CEP 12730-340
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@msd.com
Telefax : 908-735-1496

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

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification in accordance with ABNT NBR 14725 Standard
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Skin irritation : Category 3
Skin sensitization : Category 1
Specific target organ toxicity - repeated exposure : Category 1 (Kidney, Blood, Nervous system, Endocrine system, Skin)

GHS label elements in accordance with ABNT NBR 14725 Standard
Hazard pictograms : ![Hazard pictograms]
Signal Word : Danger
Hazard Statements : H302 + H332 Harmful if swallowed or if inhaled.
  H316 Causes mild skin irritation.
  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:**
- P270 Do not eat, drink or smoke when using this product.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves.

**Response:**
- P314 Get medical advice/attention if you feel unwell.
- P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.
- P362 + P364 Take off contaminated clothing and wash it before reuse.

Other hazards which do not result in classification:
None known.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance / Mixture:** Mixture

**Components**

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polyethylene glycol castor oil</td>
<td>61791-12-6</td>
<td>Short-term (acute) aquatic hazard, Category 3</td>
<td>12,5</td>
</tr>
<tr>
<td>(dl)-a-Tocopheryl acetate</td>
<td>7695-91-2</td>
<td>Acute toxicity (Oral), Category 4</td>
<td>5,15</td>
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<tr>
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<td></td>
<td>Acute toxicity (Inhalation), Category 4</td>
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<tr>
<td></td>
<td></td>
<td>Eye irritation, Category 2A</td>
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</tr>
<tr>
<td>Benzyl alcohol</td>
<td>100-51-6</td>
<td>Acute toxicity (Oral), Category 4</td>
<td>2,19</td>
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<td>Acute toxicity (Inhalation), Category 2</td>
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<td>Skin irritation, Category 2</td>
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<tr>
<td></td>
<td></td>
<td>Eye irritation, Category 2A</td>
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</tr>
<tr>
<td></td>
<td></td>
<td>Skin sensitization, Category 1</td>
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<tr>
<td></td>
<td></td>
<td>Specific target organ toxicity - repeated exposure (Kidney, Blood, Nervous system, Endocrine system, Skin), Category 1</td>
<td></td>
</tr>
<tr>
<td>Sodium selenite</td>
<td>10102-18-8</td>
<td>Acute toxicity (Oral), Category 2</td>
<td>0,35 -1,13</td>
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<td></td>
<td>Acute toxicity (Inhalation), Category 2</td>
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<td>Skin irritation, Category 2</td>
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<tr>
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<td>Specific target organ toxicity - repeated exposure (Kidney, Blood, Nervous system, Endocrine system, Skin), Category 1</td>
<td></td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

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tion


Category 2 Long-term (chronic) aquatic hazard, Category 2

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.

Most important symptoms and effects, both acute and delayed: Harmful if swallowed or if inhaled. Causes mild skin irritation. May cause an allergic skin reaction. Causes damage to organs through prolonged or repeated exposure.

Protection of first-aiders: First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Notes to physician: Treat symptomatically and supportively.

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 meth-
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.

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.

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>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>ACGIH</td>
</tr>
</tbody>
</table>

**Engineering measures**: Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., drip-less 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**: If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

**Filter type**: Combined particulates and organic vapor type

**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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: viscous liquid
Color: amber
Odor: No data available
Odor Threshold: No data available
pH: No data available
Melting point/freezing point: No data available
Initial boiling point and boiling range: No data available
Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): Not applicable
Flammability (liquids): No data available
Upper explosion limit / Upper flammability limit: No data available
Lower explosion limit / Lower flammability limit: No data available
Vapor pressure: No data available
Relative vapor density: No data available
Relative density: No data available
Density: No data available
Solubility(ies)
Water solubility : No data available

Partition coefficient: n-octanol/water : Not applicable
Autoignition temperature : No data available
Decomposition temperature : No data available

Viscosity
Viscosity, kinematic : No data available

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Particle size : Not applicable

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:
Polyethylene glycol castor oil:
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Acute oral toxicity: LD50 (Rat): > 5.000 mg/kg
Acute dermal toxicity: LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

(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
Causes mild skin irritation.

Components:

Polyethylene glycol castor oil:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

(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 / Vitamin E Injection Formulation

**Version:** 3.0  
**Revision Date:** 13.09.2019  
**SDS Number:** 895413-00007  
**Date of last issue:** 24.04.2019  
**Date of first issue:** 21.09.2016

#### Sodium selenite:
- **Method:** OECD Test Guideline 439  
- **Result:** Skin irritation

**Serious eye damage/eye irritation**

Not classified based on available information.

#### Components:

**Polyethylene glycol castor oil**:
- **Species:** Rabbit  
- **Result:** No eye irritation  
- **Method:** OECD Test Guideline 405

**(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:

**Polyethylene glycol castor oil**:
- **Test Type:** Maximization Test  
- **Routes of exposure:** Skin contact  
- **Species:** Guinea pig  
- **Result:** negative

**(dl)-a-Tocopheryl acetate**:
- **Test Type:** Draize Test  
- **Routes of exposure:** Skin contact  
- **Species:** Humans  
- **Result:** negative
SAFETY DATA SHEET

Sodium Selenite / Vitamin E Injection Formula-
tion

Version 3.0  Revision Date: 13.09.2019  SDS Number: 895413-00007  Date of last issue: 24.04.2019

Date of first issue: 21.09.2016

- Benzyl alcohol:
  - Test Type: Maximization Test
  - Routes of exposure: Skin contact
  - Species: Guinea pig
  - Method: OECD Test Guideline 406
  - Result: negative

- Sodium selenite:
  - Test Type: Local lymph node assay (LLNA)
  - Routes of exposure: Skin contact
  - Species: Mouse
  - Method: OECD Test Guideline 429
  - Result: positive

  Assessment: Probability or evidence of skin sensitization in humans

Germ cell mutagenicity
Not classified based on available information.

Components:

- Polyethylene glycol castor oil:
  - Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro
    Result: negative

- (dl)-a-Tocopheryl acetate:
  - Genotoxicity in vitro: Test Type: Chromosome aberration test in vitro
    Method: OECD Test Guideline 473
    Result: negative

  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

- Benzyl alcohol:
  - Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
    Result: negative

  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

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

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

Reproductive toxicity
Not classified based on available information.

Components:

Polyethylene glycol castor oil:
Effects on fetal development:
- Test Type: Embryo-fetal development
- Species: Rat
- Application Route: Ingestion
- Result: negative
- Remarks: Based on data from similar materials

**(dl)-α-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.
Repeated dose toxicity

Components:

Polyethylene glycol castor oil:

Species: Rat  
NOAEL: > 5.000 mg/kg  
Application Route: Ingestion  
Exposure time: 90 Days

(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  
Symptoms: hair loss, Skin disorders
SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

**Polyethylene glycol castor oil:**

- **Toxicity to fish:** LC50 (Danio rerio (zebra fish)): > 45 mg/l
  - Exposure time: 96 h
  - Method: OECD Test Guideline 203

- **Toxicity to daphnia and other aquatic invertebrates:** LC50 (Mysidopsis bahia (opossum shrimp)): > 50 mg/l
  - Exposure time: 48 h

- **Toxicity to microorganisms:** EC50: 2.8 mg/l
  - Exposure time: 5 min

**(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:** EC50 (Pseudokirchneriella subcapitata (green algae)): 770
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<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date</th>
<th>SDS Number</th>
<th>Date of last issue</th>
<th>Date of first issue</th>
</tr>
</thead>
</table>

#### Toxicity to Plants

<table>
<thead>
<tr>
<th>Component</th>
<th>Test Method</th>
<th>NOEC (mg/l)</th>
<th>Exposure Time (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOEC (Pseudokirchneriella subcapitata (green algae))</td>
<td>Exposure time: 72 h</td>
<td>Method: OECD Test Guideline 201</td>
<td></td>
</tr>
</tbody>
</table>

#### Toxicity to Daphnia and Other Aquatic Invertebrates (Chronic Toxicity)

<table>
<thead>
<tr>
<th>Component</th>
<th>Test Method</th>
<th>NOEC (mg/l)</th>
<th>Exposure Time (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOEC (Daphnia magna (Water flea))</td>
<td>Exposure time: 21 d</td>
<td>Method: OECD Test Guideline 211</td>
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</tbody>
</table>

#### Sodium Selenite:

<table>
<thead>
<tr>
<th>Component</th>
<th>Test Method</th>
<th>NOEC (mg/l)</th>
<th>Exposure Time (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOEC (Daphnia magna (Water flea))</td>
<td>Exposure time: 21 d</td>
<td>Method: OECD Test Guideline 211</td>
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</table>

#### Toxicity to Fish

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Toxicity (mg/l)</th>
<th>Exposure Time (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 201</td>
<td>LC50: 7.2 mg/l</td>
<td>Exposure time: 96 h</td>
</tr>
</tbody>
</table>

#### Toxicity to Daphnia and Other Aquatic Invertebrates

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Toxicity (mg/l)</th>
<th>Exposure Time (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 201</td>
<td>EC50 (Daphnia magna (Water flea)): 1.2 mg/l</td>
<td>Exposure time: 48 h</td>
</tr>
</tbody>
</table>

#### Toxicity to Algae/Aquatic Plants

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Toxicity (mg/l)</th>
<th>Exposure Time (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 201</td>
<td>ErC50 (Pseudokirchneriella subcapitata (green algae)): 96.9 mg/l</td>
<td>Exposure time: 72 h</td>
</tr>
</tbody>
</table>

#### Toxicity to Fish (Chronic Toxicity)

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Toxicity (mg/l)</th>
<th>Exposure Time (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 201</td>
<td>NOEC (Lepomis macrochirus (Bluegill sunfish)): 0.022 mg/l</td>
<td>Exposure time: 258 d</td>
</tr>
</tbody>
</table>

#### Toxicity to Daphnia and Other Aquatic Invertebrates (Chronic Toxicity)

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Toxicity (mg/l)</th>
<th>Exposure Time (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOEC: 0.22 mg/l</td>
<td>Exposure time: 24 d</td>
<td></td>
</tr>
</tbody>
</table>

#### Toxicity to Microorganisms

<table>
<thead>
<tr>
<th>Test Method</th>
<th>Toxicity (mg/l)</th>
<th>Exposure Time (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD Test Guideline 209</td>
<td>EC50: 180 mg/l</td>
<td>Exposure time: 3 h</td>
</tr>
</tbody>
</table>

### Persistence and Degradability

#### Components:

**Polyethylene glycol castor oil:**

- **Biodegradability:** Result: rapidly degradable
- **Remarks:** Based on data from similar materials

**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:

Polyethylene glycol castor oil:
Partition coefficient: n-octanol/water: log Pow: 1,33

Benzyl alcohol:
Partition coefficient: n-octanol/water: log Pow: 1,05

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

ANTT
Not regulated as a dangerous good
SECTION 15. REGULATORY INFORMATION

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

National List of Carcinogenic Agents for Humans - (LINACH) : Not applicable

Brazil. Ordinance No. 1274 on the control and monitoring of chemicals. : Not applicable

International Regulations

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


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

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

ACGIH / TWA : 8-hour, time-weighted average

AICS - Australian Inventory of Chemical Substances; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; 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; 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; KECl - Korea Existing Chemicals Inventory; LC50 - Lethal Con-
centration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

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.