SAFETY DATA SHEET

Amitraz Solid Formulation

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Amitraz Solid Formulation

Manufacturer or supplier’s details

Company : MSD

Address : 50 Tuas West Drive
          Singapore - Singapore 638408

Telephone : 908-740-4000

Emergency telephone number : 65 6697 2111 (24/7/365)

E-mail address : EHSDATASTEWARD@msd.com

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product

2. HAZARDS IDENTIFICATION

GHS Classification

Acute toxicity (Oral) : Category 4

Serious eye damage/eye irri-
tation : Category 1

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 2

Carcinogenicity : Category 1B

Specific target organ toxicity -
repeated exposure : Category 2 (Liver, Central nervous system)

Short-term (acute) aquatic 
hazard : Category 1

Long-term (chronic) aquatic 
hazard : Category 1

GHS label elements

Hazard pictograms : 

Signal word : Danger
Hazard statements:
H302 Harmful if swallowed.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H373 May cause damage to organs (Liver, Central nervous system) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:
Prevention:
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P260 Do not breathe dust.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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 water.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P362 + P364 Take off contaminated clothing and wash it before reuse.
P391 Collect spillage.

Storage:
P405 Store locked up.

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

Additional Labelling:
The following percentage of the mixture consists of ingredient(s) with unknown acute oral toxicity: 10 %
The following percentage of the mixture consists of ingredient(s) with unknown acute dermal toxicity: 10 %
The following percentage of the mixture consists of ingredient(s) with unknown acute inhalation toxicity: 10 %
3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Amitraz (ISO)</td>
<td>33089-61-1</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aluminium silicate</td>
<td>12141-46-7</td>
<td>&gt;= 10 - &lt;= 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Calcium carbonate</td>
<td>471-34-1</td>
<td>&gt;= 10 - &lt;= 20</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Paraformaldehyde</td>
<td>30525-89-4</td>
<td>2.55</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sodium bis(2-ethylhexyl)sulfosuccinate</td>
<td>577-11-7</td>
<td>1</td>
</tr>
</tbody>
</table>

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. Get medical attention.

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 : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention immediately.

If swallowed : If swallowed, DO NOT induce vomiting. 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. May cause an allergic skin reaction. Causes serious eye damage. Suspected of causing genetic defects. May cause cancer. May cause 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.

5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray
## 4/22

### 6. ACCIDENTAL RELEASE MEASURES

<table>
<thead>
<tr>
<th>Personal precautions, protective equipment and emergency procedures</th>
<th>Use personal protective equipment. Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental precautions</td>
<td>Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Retain and dispose of contaminated wash water. Local authorities should be advised if significant spillages cannot be contained.</td>
</tr>
<tr>
<td>Methods and materials for containment and cleaning up</td>
<td>Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. 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.</td>
</tr>
</tbody>
</table>

### 7. HANDLING AND STORAGE

| Technical measures | Static electricity may accumulate and ignite suspended dust |
causing an explosion.
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

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 dust.
Do not swallow.
Do not get in eyes.
Wash skin thoroughly after handling.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Keep container tightly closed.
Keep away from water.
Protect from moisture.
Minimize dust generation and accumulation.
Keep container closed when not in use.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Do not eat, drink or smoke when using this product.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage:
Keep in properly labelled containers.
Store locked up.
Keep tightly closed.
Store in accordance with the particular national regulations.

Materials to avoid:
Do not store with the following product types:
Strong oxidizing agents

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components 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>Amitraz (ISO)</td>
<td>33089-61-1</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>Aluminium silicate</td>
<td>12141-46-7</td>
<td>TWA (Respirable particulate matter)</td>
<td>1 mg/m³ (Aluminium)</td>
<td>ACGIH</td>
</tr>
<tr>
<td>Calcium carbonate</td>
<td>471-34-1</td>
<td>PEL (long term)</td>
<td>10 mg/m³ (Calcium carbonate)</td>
<td>SG OEL</td>
</tr>
</tbody>
</table>

Occupational exposure limits of decomposition products

<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>Formaldehyde</td>
<td>50-00-0</td>
<td>PEL (short term)</td>
<td>0.3 ppm</td>
<td>SG OEL</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
Amitraz Solid Formulation

Version: 2.1  Revision Date: 02.10.2020  SDS Number: 1732057-00008  Date of last issue: 23.03.2020  Date of first issue: 06.06.2017

<table>
<thead>
<tr>
<th></th>
<th>TWA</th>
<th>0.1 ppm</th>
<th>ACGIH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>STEL</td>
<td>0.3 ppm</td>
<td></td>
</tr>
</tbody>
</table>

**Engineering measures**: Processing may form hazardous compounds (see section 10). Minimize workplace exposure concentrations. Apply measures to prevent dust explosions. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). If sufficient ventilation is unavailable, use with local exhaust ventilation.

**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 inorganic gas/vapour type

**Hand protection**

**Material**: Chemical-resistant gloves

**Remarks**: Choose gloves to protect hands against chemicals depending on the concentration and quantity of the hazardous substance and specific to place of work. Breakthrough time is not determined for the product. Change gloves often! For special applications, we recommend clarifying the resistance to chemicals of the aforementioned protective gloves with the glove manufacturer. Wash hands before breaks and at the end of workday.

**Eye protection**: Wear the following personal protective equipment: Chemical resistant goggles must be worn. If splashes are likely to occur, wear: Face-shield

**Skin and body protection**: Select appropriate protective clothing based on chemical resistance data and an assessment of the local exposure potential. Skin contact must be avoided by using impervious protective clothing (gloves, aprons, boots, etc).

**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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

**Appearance**: powder

**Colour**: white

**Odour**: No data available
Odour 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 : Not applicable
Evaporation rate : No data available
Flammability (solid, gas) : May form explosive dust-air mixture during processing, handling or other means.
Flammability (liquids) : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapour pressure : No data available
Relative vapour density : No data available
Relative density : No data available
Density : No data available
Solubility(ies)
   Water solubility : insoluble
Partition coefficient: n-octanol/water : No data available
Auto-ignition 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.
Molecular weight : Not applicable
Particle size : No data available

10. STABILITY AND REACTIVITY
SAFETY DATA SHEET

Amitraz Solid Formulation

Version 2.1  Revision Date: 02.10.2020  SDS Number: 1732057-00008  Date of last issue: 23.03.2020
Date of first issue: 06.06.2017

Reactivity: Not classified as a reactivity hazard.
Chemical stability: Stable under normal conditions.
Possibility of hazardous reactions:
May form explosive dust-air mixture during processing, handling or other means.
Can react with strong oxidizing agents.
Hazardous decomposition products will be formed upon contact with water or humid air.

Conditions to avoid:
Exposure to moisture
Heat, flames and sparks.
Avoid dust formation.

Incompatible materials:
Oxidizing agents
Water

Hazardous decomposition products:
Contact with water or humid air: Formaldehyde

11. TOXICOLOGICAL INFORMATION

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

Acute toxicity:
Harmful if swallowed.

Product:
Acute oral toxicity: Acute toxicity estimate: 958.7 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

Amitraz (ISO):
Acute oral toxicity: LD50 (Rat): > 400 mg/kg
LD50 (Mouse): > 1,085 mg/kg
LD50 (Guinea pig): > 400 mg/kg

Acute inhalation toxicity: Remarks: No data available

Acute dermal toxicity: LD50 (Rat): > 1,600 mg/kg

Aluminium silicate:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Remarks: Based on data from similar materials
### Acute inhalation toxicity
- **Amitraz Solid Formulation**
  - LC50 (Rat): 50 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Remarks: Based on data from similar materials

### Acute dermal toxicity
- **Amitraz Solid Formulation**
  - LD50 (Rat): > 2,000 mg/kg
  - Method: OECD Test Guideline 402
  - Assessment: The substance or mixture has no acute dermal toxicity
  - Remarks: Based on data from similar materials

### Calcium carbonate
- **Acute oral toxicity**
  - LD50 (Rat): > 2,000 mg/kg
  - Method: OECD Test Guideline 420
  - Assessment: The substance or mixture has no acute oral toxicity

- **Acute inhalation toxicity**
  - LC50 (Rat): > 3 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist
  - Method: OECD Test Guideline 403
  - Assessment: The substance or mixture has no acute inhalation toxicity

- **Acute dermal toxicity**
  - LD50 (Rat): > 2,000 mg/kg
  - Method: OECD Test Guideline 402
  - Assessment: The substance or mixture has no acute dermal toxicity

### Paraformaldehyde
- **Acute oral toxicity**
  - LD50 (Rat, male): 592 mg/kg

- **Acute inhalation toxicity**
  - LC50 (Rat): 1.07 mg/l
  - Exposure time: 4 h
  - Test atmosphere: dust/mist

- **Acute dermal toxicity**
  - LD50 (Rat): > 10,000 mg/kg

### Sodium bis(2-ethylhexyl)sulfo succinate
- **Acute oral toxicity**
  - LD50 (Rat): 3,080 mg/kg

- **Acute dermal toxicity**
  - LD50 (Rabbit): > 5,000 mg/kg

### Skin corrosion/irritation
Not classified based on available information.

### Components

**Amitraz (ISO):**
- **Species:** Rabbit
- **Result:** No skin irritation
Aluminium silicate:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation
Remarks: Based on data from similar materials

Calcium carbonate:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Paraformaldehyde:
Species: Rabbit
Result: Skin irritation

Sodium bis(2-ethylhexyl)sulfosuccinate:
Species: Rabbit
Method: OECD Test Guideline 404
Result: Skin irritation

Serious eye damage/eye irritation
Causes serious eye damage.

Components:

Amitraz (ISO):
Species: Rabbit
Result: No eye irritation

Aluminium silicate:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405
Remarks: Based on data from similar materials

Calcium carbonate:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Paraformaldehyde:
Species: Rabbit
Result: Irreversible effects on the eye

Sodium bis(2-ethylhexyl)sulfosuccinate:
Species: Rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405
### Respiratory or skin sensitisation

**Skin sensitisation**
May cause an allergic skin reaction.

**Respiratory sensitisation**
Not classified based on available information.

### Components:

#### Amitraz (ISO):

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Maximisation Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Dermal</td>
</tr>
<tr>
<td>Species</td>
<td>Guinea pig</td>
</tr>
<tr>
<td>Result</td>
<td>Not a skin sensitizer.</td>
</tr>
</tbody>
</table>

#### Aluminium silicate:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Local lymph node assay (LLNA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</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>negative</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

#### Calcium carbonate:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Local lymph node assay (LLNA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</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>negative</td>
</tr>
</tbody>
</table>

#### Paraformaldehyde:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Local lymph node assay (LLNA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Mouse</td>
</tr>
<tr>
<td>Result</td>
<td>positive</td>
</tr>
<tr>
<td>Remarks</td>
<td>Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Assessment:**
Probability or evidence of high skin sensitisation rate in humans

#### Sodium bis(2-ethylhexyl)sulfosuccinate:

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Human repeat insult patch test (HRIPT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure routes</td>
<td>Skin contact</td>
</tr>
<tr>
<td>Species</td>
<td>Humans</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

**Germ cell mutagenicity**
Suspected of causing genetic defects.
SAFETY DATA SHEET

Amitraz Solid Formulation

Genotoxicity in vitro

Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: negative

Aluminium silicate:

Genotoxicity in vitro

Test Type: Bacterial reverse mutation assay (AMES)
Method: OECD Test Guideline 471
Result: negative
Remarks: Based on data from similar materials

Calcium carbonate:

Genotoxicity in vitro

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

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

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative

Paraformaldehyde:

Genotoxicity in vitro

Test Type: Bacterial reverse mutation assay (AMES)
Result: positive
Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
Result: positive
Remarks: Based on data from similar materials

Test Type: in vitro micronucleus test
Result: positive
Remarks: Based on data from similar materials

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: positive
Remarks: Based on data from similar materials

Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: positive
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Date of first issue: 06.06.2017

Remarks: Based on data from similar materials

Genotoxicity in vivo

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: inhalation (vapour)
Result: positive
Remarks: Based on data from similar materials

Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Rat
Application Route: Ingestion
Result: positive
Remarks: Based on data from similar materials

Germ cell mutagenicity - Assessment

Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

Sodium bis(2-ethylhexyl)sulfosuccinate:

Genotoxicity in vitro

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

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

Test Type: In vitro mammalian cell gene mutation test
Method: OECD Test Guideline 476
Result: negative
Remarks: Based on data from similar materials

Carcinogenicity

May cause cancer.

Components:

Amitraz (ISO):

Species
Application Route
Exposure time
NOAEL
Result
Species
Exposure time
LOAEL
Result
Target Organs

Paraformaldehyde:

Species
Application Route: Ingestion
Exposure time: 105 weeks
Result: negative
Species: Rat
Application Route: Inhalation
Exposure time: 28 Months
Result: positive
Remarks: Based on data from similar materials

Carcinogenicity - Assessment: Sufficient evidence of carcinogenicity in animal experiments

Reproductive toxicity
Not classified based on available information.

Components:

Amitraz (ISO):
Effects on fertility: Test Type: Three-generation reproduction toxicity study
Species: Rat
Application Route: Oral
Fertility: NOAEL: > 4.8 mg/kg body weight
Result: No significant adverse effects were reported

Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Oral
Developmental Toxicity: NOAEL: 3 mg/kg body weight
Remarks: No significant adverse effects were reported

Test Type: Embryo-foetal development
Species: Rabbit
Application Route: Oral
Developmental Toxicity: NOAEL: 5 mg/kg body weight
Result: Effects on foetal development

Aluminium silicate:
Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative
Remarks: Based on data from similar materials

Calcium carbonate:
Effects on fertility: Test Type: Combined repeated dose toxicity study with the reproduction/developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 422
Result: negative

Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 414
Result: negative

**Sodium bis(2-ethylhexyl)sulfosuccinate:**
Effects on fertility: Test Type: Three-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

Effects on foetal development: Test Type: Embryo-foetal development
Species: Rat
Application Route: Ingestion
Result: negative

**STOT - single exposure**
Not classified based on available information.

**Components:**

**Paraformaldehyde:**
Assessment: May cause respiratory irritation.

**STOT - repeated exposure**
May cause damage to organs (Liver, Central nervous system) through prolonged or repeated exposure.

**Components:**

**Amitraz (ISO):**
Target Organs: Liver, Central nervous system
Assessment: May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity**

**Components:**

**Amitraz (ISO):**
Species: Mouse
NOAEL: 3 mg/kg
Application Route: Oral
Exposure time: 90 Days
Target Organs: Liver

Species: Dog
NOAEL: 0.25 mg/kg
Application Route: Oral
Exposure time: 90 Days
Target Organs: Central nervous system, Liver

**Aluminium silicate:**
Species: Rat
NOAEL: \(\geq 1,000\) mg/kg  
Application Route: Ingestion  
Exposure time: 28 Days  
Remarks: Based on data from similar materials

**Calcium carbonate:**  
Species: Rat  
NOAEL: \(> 1,000\) mg/kg  
Application Route: Ingestion  
Exposure time: 28 Days  
Method: OECD Test Guideline 422

**Paraformaldehyde:**  
Species: Rat, male  
NOAEL: 15 mg/kg  
Application Route: Ingestion  
Exposure time: 105 Weeks  
Remarks: Based on data from similar materials

**Sodium bis(2-ethylhexyl)sulfosuccinate:**  
Species: Rat  
NOAEL: 750 mg/kg  
Application Route: Ingestion  
Exposure time: 90 Days

**Aspiration toxicity**  
Not classified based on available information.

**Experience with human exposure**

**Components:**

**Amitraz (ISO):**  
Ingestion: Target Organs: Central nervous system

---

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**

**Amitraz (ISO):**  
Toxicity to fish: LC50 (Lepomis macrochirus (Bluegill sunfish)): 0.45 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): 0.035 mg/l  
Exposure time: 48 h

Toxicity to algae/aquatic plants: NOEC (Pseudokirchneriella subcapitata (green algae)): 0.04 mg/l  
Exposure time: 91 h
<table>
<thead>
<tr>
<th>Component</th>
<th>Toxicity</th>
<th>EC50/NOEC/LL50</th>
<th>Method</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>M-Factor (Acute aquatic toxicity)</td>
<td>NOEC (Pimephales promelas (fathead minnow)): 0.00148 mg/l Exposure time: 32 d</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to fish (Chronic toxicity)</td>
<td>NOEC (Daphnia magna (Water flea)): 0.0011 mg/l Exposure time: 21 d</td>
<td></td>
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<tr>
<td>M-Factor (Chronic aquatic toxicity)</td>
<td>10</td>
<td></td>
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</tr>
<tr>
<td>Aluminium silicate:</td>
<td>EC50 (Daphnia magna (Water flea)): &gt; 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials</td>
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<td></td>
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<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>EC50 (Desmodesmus subspicatus (green algae)): &gt; 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials</td>
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<td></td>
<td></td>
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<tr>
<td>Toxicity to microorganisms</td>
<td>EC50: &gt; 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials</td>
<td></td>
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<tr>
<td>Calcium carbonate:</td>
<td>LL50 (Oncorhynchus mykiss (rainbow trout)): &gt; 100 mg/l Exposure time: 96 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 203</td>
<td></td>
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</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>EL50 (Daphnia magna (Water flea)): &gt; 100 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202</td>
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<td></td>
<td></td>
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<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>NOELR (Pseudokirchneriella subcapitata (green algae)): 50 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201</td>
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<tr>
<td></td>
<td>EL50 (Pseudokirchneriella subcapitata (green algae)): &gt; 100 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toxicity to microorganisms</td>
<td>NOEC: 1,000 mg/l Exposure time: 3 h Method: OECD Test Guideline 209</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Paraformaldehyde:
Toxicity to fish : LC50: > 1 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia pulex (Water flea)): > 1 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Based on data from similar materials

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 1 mg/l
Exposure time: 72 h
Method: OECD Test Guideline 201
Remarks: Based on data from similar materials

Toxicity to fish (Chronic toxicity) : NOEC (Oryzias latipes (Orange-red killifish)): > 1 mg/l
Exposure time: 28 d
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 1 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211
Remarks: Based on data from similar materials

Toxicity to microorganisms : EC50: > 10 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
Remarks: Based on data from similar materials

Sodium bis(2-ethylhexyl)sulfosuccinate:
Toxicity to fish : LC50 (Danio rerio (zebra fish)): 49 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 6.6 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): 82.5 mg/l
Exposure time: 72 h
EC10 (Desmodesmus subspicatus (green algae)): 22 mg/l
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 9 mg/l
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50 (Pseudomonas putida): 164 mg/l
Exposure time: 16 h
Persistence and degradability

Components:

**Paraformaldehyde:**
- Biodegradability: Result: Readily biodegradable.
- Remarks: Based on data from similar materials

**Sodium bis(2-ethylhexyl)sulfosuccinate:**
- Biodegradability: Result: Readily biodegradable.
  - Biodegradation: 91.2%
  - Exposure time: 28 d

Bioaccumulative potential

Components:

**Amitraz (ISO):**
- Bioaccumulation: Species: Lepomis macrochirus (Bluegill sunfish)
  - Bioconcentration factor (BCF): 1,333
- Partition coefficient: n-octanol/water: log Pow: 5.5

**Paraformaldehyde:**
- Partition coefficient: n-octanol/water: log Pow: -1.40
  - Remarks: Calculation

**Sodium bis(2-ethylhexyl)sulfosuccinate:**
- Partition coefficient: n-octanol/water: log Pow: 1.998
  - Remarks: Calculation

Mobility in soil

Components:

**Amitraz (ISO):**
- Distribution among environmental compartments: log Koc: 3.3

Other adverse effects
No data available

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.
14. TRANSPORT INFORMATION

International Regulations

UNRTDG
 UN number : UN 3077
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Amitraz (ISO))
 Class : 9
 Packing group : III
 Labels : 9

IATA-DGR
 UN/ID No. : UN 3077
 Proper shipping name : Environmentally hazardous substance, solid, n.o.s. (Amitraz (ISO))
 Class : 9
 Packing group : III
 Labels : Miscellaneous
 Packing instruction (cargo aircraft) : 956
 Packing instruction (passenger aircraft) : 956
 Environmentally hazardous : yes

IMDG-Code
 UN number : UN 3077
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Amitraz (ISO))
 Class : 9
 Packing group : III
 Labels : 9
 EmS Code : F-A, S-F
 Marine pollutant : yes

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

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.

15. REGULATORY INFORMATION

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

Workplace Safety and Health Act and Workplace Safety and Health (General Provisions) Regulations: This product is subjected to the SDS, labelling, PEL and other requirements in the Act/Regulations.
Environmental Protection and Management Act and Environmental Protection and Management (Hazardous Substances) Regulations: Amitraz

Fire Safety (Petroleum and Flammable Materials) Regulations: Not applicable

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

- AICS: not determined
- DSL: not determined
- IECSC: not determined

16. OTHER INFORMATION

Further information

Date format: dd.mm.yyyy

Full text of other abbreviations
ACGIH : USA. ACGIH Threshold Limit Values (TLV)
SG OEL : Singapore. Workplace Safety and Health Act - First Schedule Permissible Exposure Limits of Toxic Substances

ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
SG OEL / PEL (long term) : Permissible Exposure Level (PEL) Long Term
SG OEL / PEL (short term) : Permissible Exposure Level (PEL) Short Term

AIIC - Australian Inventory of Industrial Chemicals; 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; 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 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...
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.