SAFETY DATA SHEET
according to the Hazardous Products Regulations

Amitraz (50%) Solid Formulation

SECTION 1. IDENTIFICATION

Product name : Amitraz (50%) Solid Formulation
Other means of identification : No data available

Manufacturer or supplier's details
Company name of supplier : Merck & Co., Inc
Address : 126 E. Lincoln Avenue
Rahway, New Jersey U.S.A. 07065
Telephone : 908-740-4000
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
Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations
Acute toxicity (Oral) : Category 4
Acute toxicity (Inhalation) : Category 4
Serious eye damage : Category 1
Skin sensitization : Sub-category 1A
Germ cell mutagenicity : Category 2
Carcinogenicity : Category 1B
Specific target organ toxicity - repeated exposure : Category 2 (Liver, Central nervous system)

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.
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.
SAFETY DATA SHEET
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Amitraz (50%) Solid Formulation

Supplemental Hazard Statements:
- In contact with water releases gases which are fatal if inhaled.

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.
  - P271 Use only outdoors or in a well-ventilated area.
  - P272 Contaminated work clothing should not be allowed out of the workplace.
  - P280 Wear protective gloves, protective clothing, eye protection and face protection.

- **Response:**
  - P301 + P312 + P330 IF SWALLOWED: Call a doctor if you feel unwell. Rinse mouth.
  - P302 + P352 IF ON SKIN: Wash with plenty of water.
  - P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.
  - 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.
  - P308 + P313 IF exposed or concerned: Get medical attention.
  - P333 + P313 If skin irritation or rash occurs: Get medical attention.
  - P362 + P364 Take off contaminated clothing and wash it before reuse.

- **Storage:**
  - P405 Store locked up.

- **Disposal:**
  - P501 Dispose of contents and container to an approved waste disposal plant.

Other hazards:
May form explosive dust-air mixture during processing, handling or other means.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Mixture</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Components</th>
<th>Chemical name</th>
<th>Common Name/Synonym</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitraz (ISO)</td>
<td>No data available</td>
<td>33089-61-1</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>
**SAFETY DATA SHEET**
according to the Hazardous Products Regulations

**Amitraz (50%) Solid Formulation**

**Calcium carbonate**  |  **Carbonic acid calcium salt**  |  **SDS Number:**  |  **Date of last issue:**  
---------------------|-------------------------------|-----------------|------------------------
471-34-1             |                                | 10650643-00005  | 04/04/2023             

**Nonylphenol, ethoxylated**  |  **Poly(oxy-1,2-ethanediyl), .alpha.- (nonylphenyl)-.omega.-hydroxy-**  |  **SDS Number:**  |  **Date of last issue:**  
-----------------------------|---------------------------------------------------------------------------------|-----------------|------------------------
9016-45-9                  |                                                                                | 10650643-00005  | 04/04/2023             

**Paraformaldehyde**  |  **Polyoxymethylene**  |  **SDS Number:**  |  **Date of last issue:**  
---------------------|------------------------|-----------------|------------------------
30525-89-4            |                        | 10650643-00005  | 04/04/2023             

**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. 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 or if inhaled. 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. In contact with water releases gases which are fatal if inhaled.

**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**  :  None known.
Specific hazards during fire fighting: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides, Sulfur oxides, Metal 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 (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions: 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.

Methods and materials for containment and cleaning up: 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.

SECTION 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.
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Amitraz (50%) Solid Formulation

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 labeled 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
  - Self-reactive substances and mixtures
  - 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>Amitraz (ISO)</td>
<td>33089-61-1</td>
<td>TWA</td>
<td>10 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>1250 µg/100 cm²</td>
<td>Internal</td>
</tr>
<tr>
<td>Calcium carbonate</td>
<td>471-34-1</td>
<td>TWA (total dust)</td>
<td>10 mg/m³</td>
<td>CA QC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>10 mg/m³ (Calcium carbonate)</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (Total dust)</td>
<td>10 mg/m³</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA (respirable dust fraction)</td>
<td>3 mg/m³</td>
<td>CA BC OEL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>20 mg/m³</td>
<td>CA BC OEL</td>
</tr>
</tbody>
</table>

Occupational exposure limits of decomposition products

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitraz (ISO)</td>
<td>33089-61-1</td>
<td>TWA</td>
<td>10 µg/m³ (OEB 3)</td>
<td>Internal</td>
</tr>
<tr>
<td>Calcium carbonate</td>
<td>471-34-1</td>
<td>TWA</td>
<td>10 mg/m³ (Calcium carbonate)</td>
<td>CA AB OEL</td>
</tr>
<tr>
<td>Calcium carbonate</td>
<td>471-34-1</td>
<td>STEL</td>
<td>20 mg/m³</td>
<td>CA BC OEL</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
according to the Hazardous Products Regulations

Amitraz (50%) Solid Formulation

Version 3.1  Revision Date: 09/30/2023  SDS Number: 10650643-00005  Date of last issue: 04/04/2023  Date of first issue: 04/09/2022

<table>
<thead>
<tr>
<th>Formaldehyde 50-00-0</th>
<th>(Form of exposure)</th>
<th>TWA / Permissible concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.75 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.9 mg/m³</td>
</tr>
<tr>
<td>(c)</td>
<td>1 ppm</td>
<td>1.3 mg/m³</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.1 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>0.3 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>1 ppm</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>1.5 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>0.3 ppm</td>
</tr>
<tr>
<td></td>
<td>TWA</td>
<td>0.1 ppm</td>
</tr>
<tr>
<td></td>
<td>STEL</td>
<td>0.3 ppm</td>
</tr>
</tbody>
</table>

Engineering measures:
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 inorganic gas/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.
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.
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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>powder</td>
</tr>
<tr>
<td>Color</td>
<td>white gray</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>May form explosive dust-air mixture during processing, handling or other means.</td>
</tr>
<tr>
<td>Flammability (liquids)</td>
<td>No data available</td>
</tr>
<tr>
<td>Upper explosion limit / Upper flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Lower explosion limit / Lower flammability limit</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor pressure</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative vapor density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Relative density</td>
<td>No data available</td>
</tr>
<tr>
<td>Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Solubility(ies)</td>
<td>Water solubility: No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
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Amitraz (50%) Solid Formulation

Viscosity
Viscosity, kinematic: Not applicable

Explosive properties: Not explosive

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

Molecular weight: No data available

Particle size: No data available

SECTION 10. STABILITY AND REACTIVITY

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

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Inhalation
Skin contact
Ingestion
Eye contact

Acute toxicity
Harmful if swallowed or if inhaled.
In contact with water releases gases which are fatal if inhaled.

Product:

Acute oral toxicity: Acute toxicity estimate: 911.67 mg/kg
Method: Calculation method

Acute inhalation toxicity: Acute toxicity estimate: 10100 ppm
Exposure time: 4 h
Components:

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

**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

**Nonylphenol, ethoxylated:**
- **Acute oral toxicity:**
  - LD50 (Rat): 500 - 2,000 mg/kg

**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 toxicity estimate: 100 ppm
  - Exposure time: 4 h
  - Test atmosphere: gas
  - Method: Expert judgment
  - Remarks: Value is for a gas formed in contact with water

- **Acute dermal toxicity:**
  - LD50 (Rat): > 10,000 mg/kg
Skin corrosion/irritation
Not classified based on available information.

**Components:**

**Amitraz (ISO):**
Species: Rabbit
Result: No skin irritation

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

**Nonylphenol, ethoxylated:**
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

**Paraformaldehyde:**
Species: Rabbit
Result: Skin irritation

Serious eye damage/eye irritation
Causes serious eye damage.

**Components:**

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

**Calcium carbonate:**
Species: Rabbit
Result: No eye irritation

**Nonylphenol, ethoxylated:**
Species: Rabbit
Result: Irreversible effects on the eye

**Paraformaldehyde:**
Species: Rabbit
Result: Irreversible effects on the eye
Respiratory or skin sensitization

Skin sensitization
May cause an allergic skin reaction.

Respiratory sensitization
Not classified based on available information.

Components:

Amitraz (ISO):
Test Type: Maximization Test
Routes of exposure: Dermal
Species: Guinea pig
Result: Not a skin sensitiser.

Calcium carbonate:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Method: OECD Test Guideline 429
Result: negative

Nonylphenol, ethoxylated:
Test Type: Maximization Test
Routes of exposure: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

Paraformaldehyde:
Test Type: Local lymph node assay (LLNA)
Routes of exposure: Skin contact
Species: Mouse
Result: positive
Remarks: Based on data from similar materials
Assessment: Probability or evidence of high skin sensitization rate in humans

Germ cell mutagenicity
Suspected of causing genetic defects.

Components:

Amitraz (ISO):
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

**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

**Nonylphenol, ethoxylated:**
Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on data from similar materials

**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
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 (vapor)
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.

Carcinogenicity
May cause cancer.

Components:

Amitraz (ISO):
Species: Rat
Application Route: Oral
Exposure time: 2 Years
NOAEL: > 10.18 mg/kg body weight
Result: negative

Species: Mouse
Exposure time: 2 Years
LOAEL: 2.3 mg/kg body weight
Result: positive
Target Organs: Liver, Stomach

Paraformaldehyde:
Species: Rat
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
Amitraz (50%) Solid Formulation

Application Route: Oral
Fertility: NOAEL: > 4.8 mg/kg body weight
Result: No significant adverse effects were reported

Effects on fetal development:
- Test Type: Embryo-fetal development
  Species: Rat
  Developmental Toxicity: NOAEL: 3 mg/kg body weight
  Remarks: No significant adverse effects were reported
- Test Type: Embryo-fetal development
  Species: Rabbit
  Developmental Toxicity: NOAEL: 5 mg/kg body weight
  Result: Effects on fetal development.

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 fetal development
  Test Type: Embryo-fetal development
  Species: Rat
  Application Route: Ingestion
  Method: OECD Test Guideline 414
  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

**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

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

**Components:**

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

SECTION 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

Toxicity to fish (Chronic toxicity): NOEC (Pimephales promelas (fathead minnow)): 0.00148 mg/l
Exposure time: 32 d

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): NOEC (Daphnia magna (Water flea)): 0.0011 mg/l
Exposure time: 21 d

Calcium carbonate:
Toxicity to fish: LL50 (Oncorhynchus mykiss (rainbow trout)): > 100 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates: EL50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants: NOELR (Pseudokirchneriella subcapitata (green algae)): 50 mg/l
Exposure time: 72 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

Toxicity to microorganisms: NOEC: 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209
EC50: > 1,000 mg/l
Exposure time: 3 h
Method: OECD Test Guideline 209

Nonylphenol, ethoxylated:
Toxicity to fish: LC50 (Pimephales promelas (fathead minnow)): > 0.1 - 1 mg/l
Exposure time: 96 h
Remarks: Based on data from similar materials

Toxicity to daphnia and other aquatic invertebrates: EC50 (Ceriodaphnia dubia (water flea)): > 0.1 - 1 mg/l
Exposure time: 48 h
## Amitraz (50%) Solid Formulation

### Remarks
Based on data from similar materials

### Toxicity to algae/aquatic plants

| Endpoint | Endpoint Details | Toxicity | Exposure time | Method | Remarks
|----------|------------------|----------|---------------|--------|---------
| ErC50   | (Selenastrum capricornutum (green algae)) | > 1 - 10 mg/l | 72 h | OECD Test Guideline 201 | Based on data from similar materials
| EC10    | (Selenastrum capricornutum (green algae)) | > 1 mg/l | 72 h | OECD Test Guideline 201 | Based on data from similar materials

### Toxicity to fish (Chronic toxicity)

| Endpoint | Endpoint Details | Toxicity | Exposure time | Method | Remarks
|----------|------------------|----------|---------------|--------|---------
| NOEC    | (Oryzias latipes (Japanese medaka)) | > 0.1 - 1 mg/l | 100 d | | Based on data from similar materials

### Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

| Endpoint | Endpoint Details | Toxicity | Exposure time | Method | Remarks
|----------|------------------|----------|---------------|--------|---------
| NOEC    | (Mysidopsis bahia (opossum shrimp)) | > 0.001 - 0.01 mg/l | 28 d | OECD Test Guideline 202 | Based on data from similar materials

### Paraformaldehyde:

| Endpoint | Endpoint Details | Toxicity | Exposure time | Method | Remarks
|----------|------------------|----------|---------------|--------|---------
| LC50    |                      | > 1 mg/l | 96 h | | Based on data from similar materials
| EC50    | (Daphnia pulex (Water flea)) | > 1 mg/l | 48 h | OECD Test Guideline 202 | Based on data from similar materials

### Toxicity to algae/aquatic plants

| Endpoint | Endpoint Details | Toxicity | Exposure time | Method | Remarks
|----------|------------------|----------|---------------|--------|---------
| ErC50   | (Desmodesmus subspicatus (green algae)) | > 1 mg/l | 72 h | OECD Test Guideline 201 | Based on data from similar materials

### Toxicity to fish (Chronic toxicity)

| Endpoint | Endpoint Details | Toxicity | Exposure time | Method | Remarks
|----------|------------------|----------|---------------|--------|---------
| NOEC    | (Oryzias latipes (Orange-red killifish)) | > 1 mg/l | 28 d | | Based on data from similar materials

### Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

| Endpoint | Endpoint Details | Toxicity | Exposure time | Method | Remarks
|----------|------------------|----------|---------------|--------|---------
| NOEC    | (Daphnia magna (Water flea)) | > 1 mg/l | 21 d | OECD Test Guideline 211 | Based on data from similar materials

### Toxicity to microorganisms

| Endpoint | Endpoint Details | Toxicity | Exposure time | Method | Remarks
|----------|------------------|----------|---------------|--------|---------
| EC50    |                      | > 10 mg/l | 3 h | OECD Test Guideline 209 | Based on data from similar materials
Persistence and degradability

Components:

Nonylphenol, ethoxylated:
Biodegradability: Result: Not readily biodegradable.
Remarks: Based on data from similar materials

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

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

Nonylphenol, ethoxylated:
Partition coefficient: n-octanol/water: log Pow: 4.48

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

Mobility in soil

Components:

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

Other adverse effects
No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods
Waste from residues: Do not dispose of waste into sewer.
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**

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<tr>
<th>UN number</th>
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<tr>
<td>Proper shipping name</td>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (amitraz (ISO), Nonylphenol, ethoxylated)</td>
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<table>
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<tr>
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<tr>
<td>Labels</td>
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**IATA-DGR**

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**IMDG-Code**

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<tr>
<td>Marine pollutant</td>
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</table>

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation**

**TDG**

<table>
<thead>
<tr>
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**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**

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

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

**SECTION 16. OTHER INFORMATION**

**Full text of other abbreviations**

- **ACGIH**: USA. ACGIH Threshold Limit Values (TLV)
- **CA AB OEL**: Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
- **CA BC OEL**: Canada. British Columbia OEL
- **CA ON OEL**: Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
- **CA QC OEL**: Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants

**Abbreviations:**

- **ACGIH / TWA**: 8-hour, time-weighted average
- **ACGIH / STEL**: Short-term exposure limit
- **CA AB OEL / TWA**: 8-hour Occupational exposure limit
- **CA AB OEL / (c)**: ceiling occupational exposure limit
- **CA BC OEL / TWA**: 8-hour time weighted average
- **CA BC OEL / STEL**: short-term exposure limit
- **CA ON OEL / C**: Ceiling Limit (C)
- **CA ON OEL / STEL**: Short-Term Exposure Limit (STEL)
- **CA QC OEL / TWAEV**: Time-weighted average exposure value
- **CA QC OEL / C**: Ceiling

**Additional symbols and acronyms:**

- **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 Organization 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 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; TECI - Thailand Existing Chemicals Inventory; 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

Sources of key data used to compile the Material Safety Data Sheet:


Revision Date: 09/30/2023
Date format: mm/dd/yyyy

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.

CA / Z8