SAFETY DATA SHEET

Amitraz (12.5%) Formulation

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name : Amitraz (12.5%) Formulation

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the Substance/Mixture : Veterinary product

1.3 Details of the supplier of the safety data sheet

Company : MSD
20 Spartan Road
1619 Spartan, South Africa

Telephone : +27119239300

Telefax : 908-735-1496

E-mail address of person responsible for the SDS : EHSDATASTEWARD@msd.com

1.4 Emergency telephone number

1-908-423-6000

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

<table>
<thead>
<tr>
<th>Hazard Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>H318:</td>
<td>Causes serious eye damage.</td>
</tr>
<tr>
<td>H317:</td>
<td>May cause an allergic skin reaction.</td>
</tr>
<tr>
<td>H360F:</td>
<td>May damage fertility.</td>
</tr>
<tr>
<td>H336:</td>
<td>May cause drowsiness or dizziness.</td>
</tr>
<tr>
<td>H373:</td>
<td>May cause damage to organs through prolonged or repeated exposure.</td>
</tr>
<tr>
<td>H304:</td>
<td>May be fatal if swallowed and enters airways.</td>
</tr>
<tr>
<td>H400:</td>
<td>Very toxic to aquatic life.</td>
</tr>
<tr>
<td>H410:</td>
<td>Very toxic to aquatic life with long lasting effects.</td>
</tr>
</tbody>
</table>

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :
Signal word: Danger

Hazard statements:
- H304: May be fatal if swallowed and enters airways.
- H317: May cause an allergic skin reaction.
- H318: Causes serious eye damage.
- H336: May cause drowsiness or dizziness.
- H360F: May damage fertility.
- H373: May cause damage to organs through prolonged or repeated exposure.
- H410: Very toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements:
- EUH066: Repeated exposure may cause skin dryness or cracking.

Precautionary statements:
- Prevention:
  - P201: Obtain special instructions before use.
  - P273: Avoid release to the environment.
  - P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

  Response:
  - P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
  - 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.
  - P391: Collect spillage.

Hazardous components which must be listed on the label:
- Hydrocarbons, C10, aromatics, <1% naphthalene
- 4-Nonylphenol, branched, ethoxylated
- Amitraz (ISO)
- bis(2,6-diisopropylphenyl)carbodiimide

2.3 Other hazards
None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons, C10, aromatics, &lt;1% naphthalene</td>
<td>64742-94-5</td>
<td></td>
<td></td>
<td></td>
<td>STOT SE3; H336 Asp. Tox.1; H304 Aquatic Chronic2; H411</td>
<td>&gt;= 50 - &lt; 70</td>
</tr>
<tr>
<td>4-Nonylphenol, branched, ethoxylated</td>
<td>127087-87-0</td>
<td></td>
<td></td>
<td></td>
<td>Acute Tox.4; H302 Eye Dam.1; H318</td>
<td>&gt;= 10 - &lt; 20</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET

Amitraz (12.5%) Formulation

Aquatic Chronic 2; H411

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Alternative CAS Number(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amitraz (ISO)</td>
<td>33089-61-1 251-375-4 612-086-00-2</td>
</tr>
<tr>
<td>bis(2,6-diisopropylphenyl)carbodiimide</td>
<td>2162-74-5 218-487-5</td>
</tr>
</tbody>
</table>

Alternative CAS Numbers for some regions

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Alternative CAS Number(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Nonylphenol, branched, ethoxylated</td>
<td>68412-54-4</td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of 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.

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).

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. If vomiting occurs have person lean forward.
Call a physician or poison control centre immediately.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed
Risks : May be fatal if swallowed and enters airways.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause drowsiness or dizziness.
May damage fertility.
May cause damage to organs through prolonged or repeated exposure.
Repeated exposure may cause skin dryness or cracking.

4.3 Indication of any immediate medical attention and special treatment needed
Treatment : Treat symptomatically and supportively.

SECTION 5: Firefighting measures

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

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting : Exposure to combustion products may be a hazard to health.

Hazardous combustion products : Carbon oxides
Nitrogen oxides (NOx)

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

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.

SECTION 6: Accidental release measures

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

6.2 Environmental precautions
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.

6.3 Methods and material for containment and cleaning up
Methods for cleaning up: Soak up with inert absorbent material. For large spills, provide dyking or other appropriate containment to keep material from spreading. If dyked 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.

6.4 Reference to other sections
See sections: 7, 8, 11, 12 and 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
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 vapours or spray mist. Do not swallow. Do not get in 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.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers: Keep in properly labelled containers. Store locked up. Keep tightly closed. Keep in a cool, well-ventilated place. Store in accordance with the particular national regulations.

Advice on common storage: Do not store with the following product types:
- Strong oxidizing agents
- Organic peroxides
- Explosives
- Gases

7.3 Specific end use(s)

Specific use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Occupational Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Amitraz (ISO)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>bis(2,6-diisopropylphenyl)carbodiimide</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0,094 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>0,013 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0,023 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>0,007 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Skin contact</td>
<td>Acute systemic effects</td>
<td>20 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Long-term systemic effects</td>
<td>0,007 mg/kg bw/day</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>Acute systemic effects</td>
<td>0,021 mg/kg bw/day</td>
</tr>
<tr>
<td>Hydrocarbons, C10, aromatics, &lt;1% naphthalene</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>151 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>12,5 mg/kg bw/day</td>
</tr>
</tbody>
</table>
Consumers

**Inhalation**
Long-term systemic effects: 32 mg/m³

**Consumers**

**Skin contact**
Long-term systemic effects: 7.5 mg/kg bw/day

**Consumers**

**Ingestion**
Long-term systemic effects: 7.5 mg/kg bw/day

---

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>bis(2,6-diisopropylphenyl)carbodiimide</td>
<td>Fresh water</td>
<td>0.0001 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.00001 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.001 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>10 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>5,461 mg/kg dry weight (d.w.)</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>4,445 mg/kg dry weight (d.w.)</td>
</tr>
</tbody>
</table>

---

**8.2 Exposure controls**

**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**

**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.

**Hand protection**

Material: Chemical-resistant gloves

**Remarks**

Consider double gloving.

**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.

**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 vapour type (A-P)
9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>liquid</td>
</tr>
<tr>
<td>Colour</td>
<td>yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic, aromatic, hydrocarbon-like</td>
</tr>
<tr>
<td>Odour 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>Not applicable</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>106 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</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>Vapour pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Relative vapour density</td>
<td>No data available</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></td>
</tr>
<tr>
<td>Water solubility</td>
<td>No data available</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>No data available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td></td>
</tr>
<tr>
<td>Viscosity, kinematic</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
<tr>
<td>Oxidizing properties</td>
<td>The substance or mixture is not classified as oxidizing.</td>
</tr>
</tbody>
</table>

9.2 Other information

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability (liquids)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Molecular weight</td>
<td>No data available</td>
</tr>
</tbody>
</table>
SECTION 10: Stability and reactivity

10.1 Reactivity
Not classified as a reactivity hazard.

10.2 Chemical stability
Stable under normal conditions.

10.3 Possibility of hazardous reactions
Hazardous reactions: Can react with strong oxidizing agents.

10.4 Conditions to avoid
Conditions to avoid: None known.

10.5 Incompatible materials
Materials to avoid: Oxidizing agents

10.6 Hazardous decomposition products
No hazardous decomposition products are known.

SECTION 11: Toxicological information

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

Acute toxicity
Not classified based on available information.

Product:
Acute oral toxicity: Acute toxicity estimate: > 2,000 mg/kg
Method: Calculation method

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
Method: OECD Test Guideline 420
Remarks: Based on data from similar materials

Acute inhalation toxicity: LC50 (Rat): > 4,778 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: OECD Test Guideline 403
Remarks: Based on data from similar materials
Acute dermal toxicity: LD50 (Rabbit): > 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

4-Nonylphenol, branched, ethoxylated:
Acute oral toxicity: LD50 (Rat): 1.310 mg/kg
Acute dermal toxicity: LD50 (Rabbit): > 2.000 mg/kg

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

bis(2,6-diisopropylphenyl)carbodiimide:
Acute oral toxicity: LD50 (Rat): > 300 - 2.000 mg/kg
Method: OECD Test Guideline 423
Acute dermal toxicity: LD50 (Rat): > 2.000 mg/kg
Method: OECD Test Guideline 402
Assessment: The substance or mixture has no acute dermal toxicity

Skin corrosion/irritation
Repeated exposure may cause skin dryness or cracking.

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
Assessment: Repeated exposure may cause skin dryness or cracking.

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

bis(2,6-diisopropylphenyl)carbodiimide:
Species: Rabbit
Method: OECD Test Guideline 404
Result: No skin irritation

Serious eye damage/eye irritation
Causes serious eye damage.
Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
Species: Rabbit
Result: No eye irritation
Remarks: Based on data from similar materials

4-Nonylphenol, branched, ethoxylated:
Species: Rabbit
Result: Irreversible effects on the eye
Remarks: Based on data from similar materials

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

bis(2,6-diisopropylphenyl)carbodiimide:
Species: Rabbit
Method: OECD Test Guideline 405
Result: No eye irritation

Respiratory or skin sensitisation

Skin sensitisation
May cause an allergic skin reaction.

Respiratory sensitisation
Not classified based on available information.

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Result: negative
Remarks: Based on data from similar materials

Amitraz (ISO):
Test Type: Maximisation Test
Exposure routes: Dermal
Species: Guinea pig
Result: Sensitiser

bis(2,6-diisopropylphenyl)carbodiimide:
Test Type: Maximisation Test
Exposure routes: Skin contact
Species: Guinea pig
Method: OECD Test Guideline 406
Result: negative
Germ cell mutagenicity
Not classified based on available information.

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Genotoxicity in vitro: Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo: Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Rat
Application Route: inhalation (vapour)
Result: negative
Remarks: Based on data from similar materials

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

bis(2,6-diisopropylphenyl)carbodiimide:

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

Carcinogenicity
Not classified based on available information.

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

Reproductive toxicity
May damage fertility.

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
Effects on fertility: Test Type: Three-generation reproduction toxicity study  
Species: Rat  
Application Route: inhalation (vapour)  
Result: negative  
Remarks: Based on data from similar materials

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

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

bis(2,6-diisopropylphenyl)carbodiimide:
Effects on fertility: Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Ingestion  
Method: OECD Test Guideline 421
Result: positive

Test Type: Fertility
Species: Rat
Application Route: Ingestion
Result: positive

Effects on foetal development:
Test Type: Reproduction/Developmental toxicity screening test
Species: Rat
Application Route: Ingestion
Method: OECD Test Guideline 421
Result: equivocal

Reproductive toxicity - Assessment:
Clear evidence of adverse effects on sexual function and fertility, based on animal experiments.

STOT - single exposure
May cause drowsiness or dizziness.

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
Assessment: May cause drowsiness or dizziness.
Remarks: Based on data from similar materials

STOT - repeated exposure
May cause damage to organs 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.

bis(2,6-diisopropylphenyl)carbodiimide:
Exposure routes: Ingestion
Target Organs: Kidney, Heart, Gastrointestinal tract, Lymph nodes
Assessment: Causes damage to organs through prolonged or repeated exposure.

Repeated dose toxicity

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
Species: Rat
NOAEL: 300 mg/kg
Application Route: Ingestion
Exposure time: 13 Weeks
Remarks: Based on data from similar materials
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

bis(2,6-diisopropylphenyl)carbodiimide:
Species: Rat
NOAEL: 4 mg/kg
LOAEL: 16 mg/kg
Application Route: Ingestion
Exposure time: 28 Days
Method: OECD Test Guideline 407

Aspiration toxicity
May be fatal if swallowed and enters airways.

Product:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Experience with human exposure

Components:

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

SECTION 12: Ecological information

12.1 Toxiciy

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
Toxicity to fish: LL50 (Oncorhynchus mykiss (rainbow trout)): 2 - 5 mg/l
Exposure time: 96 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 203
### Amitraz (12.5%) Formulation

**Remarks:** Based on data from similar materials

<table>
<thead>
<tr>
<th>Substance</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>Toxicity to algae/aquatic plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Accommodated Fraction</td>
<td>EL50 (Daphnia magna (Water flea)): 3 - 10 mg/l Exposure time: 48 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 202 Remarks: Based on data from similar materials</td>
<td>EL50 (Pseudokirchneriella subcapitata (green algae)): &gt; 1 - 3 mg/l Exposure time: 72 h Test substance: Water Accommodated Fraction Method: OECD Test Guideline 201 Remarks: Based on data from similar materials</td>
</tr>
</tbody>
</table>

**4-Nonylphenol, branched, ethoxylated:**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>Toxicity to algae/aquatic plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test substance: Water Accommodated Fraction</td>
<td>LC50: &gt; 1 - 10 mg/l Exposure time: 96 h Remarks: Based on data from similar materials</td>
<td>EC50: &gt; 1 - 10 mg/l Exposure time: 48 h Remarks: Based on data from similar materials</td>
<td>NOEC: 20 mg/l Exposure time: 96 h Remarks: Based on data from similar materials</td>
</tr>
</tbody>
</table>

**Amitraz (ISO):**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Toxicity to fish</th>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>Toxicity to algae/aquatic plants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test substance: Water Accommodated Fraction</td>
<td>LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,45 mg/l Exposure time: 96 h</td>
<td>EC50 (Daphnia magna (Water flea)): 0,035 mg/l Exposure time: 48 h</td>
<td>NOEC (Pseudokirchneriella subcapitata (green algae)): 0,04 mg/l Exposure time: 91 h</td>
</tr>
</tbody>
</table>

**M-Factor (Acute aquatic toxicity):**

<table>
<thead>
<tr>
<th>Substance</th>
<th>Toxicity to fish (Chronic toxicity)</th>
<th>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</th>
<th>M-Factor (Chronic aquatic toxicity)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOEC: 0,00148 mg/l Exposure time: 32 d Species: Pimephales promelas (fathead minnow)</td>
<td>NOEC: 0,0011 mg/l Exposure time: 21 d Species: Daphnia magna (Water flea)</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

**bis(2,6-diisopropylphenyl)carbodiimide:**
Toxicity to fish: LC50 (Oncorhynchus mykiss (rainbow trout)): > 0.1 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 203
  Remarks: No toxicity at the limit of solubility

Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia magna (Water flea)): > 1 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202
  Remarks: No toxicity at the limit of solubility

Toxicity to algae/aquatic plants: ErC50 (Desmodesmus subspicatus (green algae)): > 1 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201
  Remarks: No toxicity at the limit of solubility

  NOEC (Desmodesmus subspicatus (green algae)): > 1 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201

Toxicity to microorganisms: EC50: > 1.000 mg/l
  Exposure time: 3 h
  Method: OECD Test Guideline 209

12.2 Persistence and degradability

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:
  Biodegradability: Result: Not readily biodegradable.
  Biodegradation: 49.56 %
  Exposure time: 28 d
  Method: OECD Test Guideline 301F

bis(2,6-diisopropylphenyl)carbodiimide:
  Biodegradability: Result: Not readily biodegradable.
  Biodegradation: 3 %
  Exposure time: 28 d
  Method: OECD Test Guideline 301B

12.3 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

bis(2,6-diisopropylphenyl)carbodiimide:
  Bioaccumulation: Bioconcentration factor (BCF): > 500
  Partition coefficient: n-octanol/water: log Pow: > 6,2
12.4 Mobility in soil

Components:

Amitraz (ISO):

Distribution among environmental compartments: log Koc: 3,3

12.5 Results of PBT and vPvB assessment

Not relevant

12.6 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product: Dispose of in accordance with local regulations. According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user, preferably in discussion with the waste disposal authorities.

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

14.1 UN number

<table>
<thead>
<tr>
<th>ADN</th>
<th>ADR</th>
<th>RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN 3082</td>
<td>UN 3082</td>
<td>UN 3082</td>
<td>UN 3082</td>
<td>UN 3082</td>
</tr>
</tbody>
</table>

14.2 UN proper shipping name

<table>
<thead>
<tr>
<th>ADN</th>
<th>ADR</th>
<th>RID</th>
<th>IMDG</th>
</tr>
</thead>
</table>
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**Amitraz (12.5%) Formulation**

<table>
<thead>
<tr>
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<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.3</td>
<td>23.03.2020</td>
<td>1829159-00008</td>
<td>13.09.2019</td>
<td>11.07.2017</td>
</tr>
</tbody>
</table>

IATA: Environmentally hazardous substance, liquid, n.o.s. (Amitraz (ISO))

### 14.3 Transport hazard class(es)

<table>
<thead>
<tr>
<th>Class</th>
<th>ADN</th>
<th>ADR</th>
<th>RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
</tbody>
</table>

### 14.4 Packing group

**ADN**
- Packing group: III
- Classification Code: M6
- Hazard Identification Number: 90
- Labels: 9

**ADR**
- Packing group: III
- Classification Code: M6
- Hazard Identification Number: 90
- Labels: 9
- Tunnel restriction code: (-)

**RID**
- Packing group: III
- Classification Code: M6
- Hazard Identification Number: 90
- Labels: 9

**IMDG**
- Packing group: III
- Labels: 9

**IATA (Cargo)**
- Packing instruction (cargo aircraft): 964
- Packing instruction (LQ): Y964
- Packing group: III
- Labels: Miscellaneous

**IATA (Passenger)**
- Packing instruction (passenger aircraft): 964
- Packing instruction (LQ): Y964
- Packing group: III
- Labels: Miscellaneous

### 14.5 Environmental hazards

<table>
<thead>
<tr>
<th>Class</th>
<th>ADN</th>
<th>ADR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Environmentally hazardous: yes</td>
<td>Environmentally hazardous: yes</td>
</tr>
</tbody>
</table>
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RID
Environmentally hazardous : yes

IMDG
Marine pollutant : yes

IATA (Passenger)
Environmentally hazardous : yes

IATA (Cargo)
Environmentally hazardous : yes

14.6 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.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Remarks : Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
The components of this product are reported in the following inventories:
AICS : not determined
DSL : not determined
IECSC : not determined

15.2 Chemical safety assessment
A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

Other 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 H-Statements
H302 : Harmful if swallowed.
H304 : May be fatal if swallowed and enters airways.
H317 : May cause an allergic skin reaction.
H318 : Causes serious eye damage.
H336 : May cause drowsiness or dizziness.
H360F : May damage fertility.
H372 : Causes damage to organs through prolonged or repeated exposure.
H373 : May cause damage to organs through prolonged or repeated exposure.
H400 : Very toxic to aquatic life.
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H410 : Very toxic to aquatic life with long lasting effects.
H411 : Toxic to aquatic life with long lasting effects.
H413 : May cause long lasting harmful effects to aquatic life.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Asp. Tox. : Aspiration hazard
Eye Dam. : Serious eye damage
Repr. : Reproductive toxicity
Skin Sens. : Skin sensitisation
STOT RE : Specific target organ toxicity - repeated exposure
STOT SE : Specific target organ toxicity - single exposure

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; 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; 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; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; 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; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of very high concern; TCSI - Taiwan Chemical Substance 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

Further information


Classification of the mixture: Classification procedure:
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</tbody>
</table>

Eye Dam. 1     H318     Calculation method
Skin Sens. 1   H317     Calculation method
Repr. 1B       H360F    Calculation method
STOT SE 3      H336     Calculation method
STOT RE 2      H373     Calculation method
Asp. Tox. 1    H304     Based on product data or assessment
Aquatic Acute 1 H400     Calculation method
Aquatic Chronic 1 H410     Calculation method

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.

ZA / EN