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

1.1 Product identifier
Trade name: Amitraz Liquid 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
Walton Manor, Walton
MK7 7AJ Milton Keynes - United Kingdom
Telephone: 908-740-4000
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)
- Skin irritation, Category 2: H315: Causes skin irritation.
- Skin sensitisation, Category 1: H317: May cause an allergic skin reaction.
- Germ cell mutagenicity, Category 1B: H340: May cause genetic defects.
- Carcinogenicity, Category 1B: H350: May cause cancer.
- Reproductive toxicity, Category 2: H361: Suspected of damaging fertility or the unborn child.
- Specific target organ toxicity - single exposure, Category 3: H336: May cause drowsiness or dizziness.
- Specific target organ toxicity - repeated exposure, Category 2: H373: May cause damage to organs through prolonged or repeated exposure.
- Aspiration hazard, Category 1: H304: May be fatal if swallowed and enters airways.
- Short-term (acute) aquatic hazard, Category 1: H400: Very toxic to aquatic life.
- Long-term (chronic) aquatic hazard, Category 1: H410: Very toxic to aquatic life with long lasting effects.

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)
Amitraz Liquid Formulation

Hazard pictograms:
- Flammable, toxic inhalation, toxic by ingestion, toxic by dermal absorption, dangerous to the environment.

Signal word: Danger

Hazard statements:
- H226 Flammable liquid and vapour.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H336 May cause drowsiness or dizziness.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H361 Suspected of damaging fertility or the unborn child.
- H373 May cause damage to organs through prolonged or repeated exposure.
- H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements:
- Prevention:
  - P201 Obtain special instructions before use.
  - P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
  - 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.
  - P391 Collect spillage.

Hazardous components which must be listed on the label:
- Solvent naphtha (petroleum), light aromatic
- 4-Nonylphenol, branched, ethoxylated
- Amitraz (ISO)
- 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate

Additional Labelling
- Restricted to professional users.

2.3 Other hazards
- Vapours may form explosive mixture with air.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical name</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>
</table>

2 / 24
## 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 for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**In case of eye contact**: Flush eyes with water as a precaution.

<table>
<thead>
<tr>
<th>Substance Description</th>
<th>CAS Number</th>
<th>Classification</th>
<th>Concentration (mg/L)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>Flam. Liq. 3; H226</td>
<td>&gt;= 60 - &lt;= 70</td>
<td></td>
</tr>
<tr>
<td></td>
<td>265-199-0</td>
<td>Skin Irrit. 2; H315</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>649-356-00-4</td>
<td>Muta. 1B; H340</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carc. 1B; H350</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>STOT SE 3; H336</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Asp. Tox. 1; H304</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Chronic 2; H411</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-Nonylphenol, branched, ethoxylated</td>
<td>127087-87-0</td>
<td>Repr. 2; H361</td>
<td>&gt;= 10 - &lt;= 20</td>
<td></td>
</tr>
<tr>
<td>Amitraz (ISO)</td>
<td>33089-61-1</td>
<td>Acute Tox. 4; H302</td>
<td>12.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>251-375-4</td>
<td>Skin Sens. 1B; H317</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>612-086-00-2</td>
<td>STOT RE 2; H373</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Acute 1; H400</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Aquatic Chronic 1; H410</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate</td>
<td>2386-87-0</td>
<td>Skin Sens. 1; H317</td>
<td>&lt; 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>219-207-4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.
Get medical attention if irritation develops and persists.

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.
- Causes skin irritation.
- May cause an allergic skin reaction.
- May cause drowsiness or dizziness.
- May cause genetic defects.
- May cause cancer.
- Suspected of damaging fertility or the unborn child.
- May cause damage to organs through prolonged or repeated exposure.

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:
- High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting:
- Do not use a solid water stream as it may scatter and spread fire.
- Flash back possible over considerable distance.
- Vapours may form explosive mixtures with air.
- Exposure to combustion products may be a hazard to health.

Hazardous combustion products:
- Carbon oxides

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:
- Remove all sources of ignition.
- 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:
- Non-sparking tools should be used.
- Soak up with inert absorbent material.
- Suppress (knock down) gases/vapours/mists with a water spray jet.
- 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.
- If advised by assessment of the local exposure potential, use
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

Version 3.3  Revision Date: 23.03.2020  SDS Number: 1644322-00010  Date of last issue: 13.09.2019  Date of first issue: 09.05.2017

only in an area equipped with explosion-proof exhaust ventilation.

Advice on safe handling:
Do not get on skin or clothing.
Do not breathe vapours or spray mist.
Do not swallow.
Avoid contact with eyes.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Non-sparking tools should be used.
Keep container tightly closed.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
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. Keep away from heat and sources of ignition.

Advice on common storage:
Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Flammable solids
Pyrophoric liquids
Pyrophoric solids
Self-heating substances and mixtures
Substances and mixtures, which in contact with water, emit flammable gases
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>Components</th>
<th>CAS-No.</th>
<th>Value type (Form)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
</table>

6 / 24
Further information: Substances used as active ingredients in pesticides are listed under their systematic chemical names and/or their (ISO) common names. These may sometimes be used as parts of the names of proprietary pesticide formulations. In all cases, the exposure limit applies to the specific active ingredient in the workplace atmosphere and not the formulation as a whole.

<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>7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate</td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term systemic effects</td>
<td>0.18 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Inhalation</td>
<td>Long-term local effects</td>
<td>0.18 mg/m³</td>
</tr>
<tr>
<td></td>
<td>Workers</td>
<td>Skin contact</td>
<td>Long-term systemic effects</td>
<td>0.05 mg/kg bw/day</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate</td>
<td>Fresh water</td>
<td>0.024 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>0.0024 mg/l</td>
</tr>
<tr>
<td></td>
<td>Intermittent use/release</td>
<td>0.24 mg/l</td>
</tr>
<tr>
<td></td>
<td>Sewage treatment plant</td>
<td>19.5 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>0.211 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>0.0211 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Soil</td>
<td>0.0282 mg/kg</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,
Hand protection

Material : Chemical-resistant gloves

Remarks : Consider double gloving. Take note that the product is flammable, which may impact the selection of hand protection.

Skin and body protection

Material : Work uniform or laboratory coat.

Remarks : 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

Material : If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection. Equipment should conform to BS EN 14387 Filter type : Combined particulates and organic vapour type (A-P)

SECTION 9: Physical and chemical properties

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>Colorless to pale yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</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>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>56 °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>
</tbody>
</table>
Amitraz Liquid Formulation

Density : 0.92 - 1.20 g/cm³

Solubility(ies)
  Water solubility : No data available
  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.

9.2 Other information
  Flammability (liquids) : Not applicable
  Molecular weight : Not applicable
  Particle size : No data available

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 : Flammable liquid and vapour. Vapours may form explosive mixture with air. Can react with strong oxidizing agents.

10.4 Conditions to avoid
  Conditions to avoid : Heat, flames and sparks.

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:
Solvent naphtha (petroleum), light aromatic:
- Acute oral toxicity: LD50 (Rat): > 5,000 mg/kg
- Acute inhalation toxicity: LC50 (Rat): > 5.61 mg/l
  Exposure time: 4 h
  Test atmosphere: vapour
- Acute dermal toxicity: LD50 (Rabbit): > 2,000 mg/kg

4-Nonylphenol, branched, ethoxylated:
- Acute oral toxicity: LD50 (Rat): > 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

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
- Acute oral toxicity: LD50 (Rat, male): 2,959 - 5,000 mg/kg
  Method: OECD Test Guideline 401
- Acute inhalation toxicity: LC50 (Rat): >= 5.19 mg/l
  Exposure time: 4 h
  Test atmosphere: dust/mist
  Method: OECD Test Guideline 436
  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
Skin corrosion/irritation
Causes skin irritation.

**Components:**

**Solvent naphtha (petroleum), light aromatic:**
Species: Rabbit  
Method: OECD Test Guideline 404  
Result: Skin irritation

**4-Nonylphenol, branched, ethoxylated:**
Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation  
Remarks: Based on data from similar materials

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

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**
Species: Rabbit  
Method: OECD Test Guideline 404  
Result: No skin irritation

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

**Components:**

**Solvent naphtha (petroleum), light aromatic:**
Species: Rabbit  
Method: OECD Test Guideline 405  
Result: No eye irritation

**4-Nonylphenol, branched, ethoxylated:**
Species: Rabbit  
Method: OECD Test Guideline 405  
Result: No eye irritation  
Remarks: Based on data from similar materials

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

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**
Species: Rabbit  
Method: OECD Test Guideline 405
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

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:

Solvent naphtha (petroleum), light aromatic:
Test Type : Buehler Test
Exposure routes : Skin contact
Species : Guinea pig
Result : negative

4-Nonylphenol, branched, ethoxylated:
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

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
Test Type : Maximisation Test
Exposure routes : Skin contact
Species : Guinea pig
Result : positive
Assessment : Probability or evidence of skin sensitisation in humans

Germ cell mutagenicity
May cause genetic defects.

Components:

Solvent naphtha (petroleum), light aromatic:
Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
                      Result: negative
                      Test Type: In vitro mammalian cell gene mutation test
                      Result: positive
Genotoxicity in vivo : Test Type: Sister chromatid exchange analysis in spermato-

Amitraz Liquid Formulation

Germ cell mutagenicity: Assessment
- Positive result(s) from in vivo heritable germ cell mutagenicity tests in mammals

4-Nonylphenol, branched, ethoxylated:
- Genotoxicity in vitro: Test Type: Bacterial reverse mutation assay (AMES)
  Method: OECD Test Guideline 471
  Result: negative
  Remarks: Based on data from similar materials
- Test Type: Chromosome aberration test in vitro
  Method: OECD Test Guideline 473
  Result: negative
  Remarks: Based on data from similar materials
- Test Type: In vitro mammalian cell gene mutation test
  Method: OECD Test Guideline 476
  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

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
- Genotoxicity in vitro: Test Type: In vitro mammalian cell gene mutation test
  Result: positive
- Genotoxicity in vivo: Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo
  Species: Rat
  Application Route: Ingestion
  Method: OECD Test Guideline 486
  Result: negative
  Test Type: Micronucleus test
  Species: Mouse
  Application Route: Intraperitoneal injection
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

Result: negative

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

Carcinogenicity
May cause cancer.

Components:

Solvent naphtha (petroleum), light aromatic:
- Species: Mouse
- Application Route: Skin contact
- Exposure time: 2 Years
- Result: positive

Carcinogenicity - Assessment: Sufficient evidence of carcinogenicity in animal experiments

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
Suspected of damaging fertility or the unborn child.

Components:

Solvent naphtha (petroleum), light aromatic:
- Effects on fertility: Test Type: Reproduction/Developmental toxicity screening test
  - Species: Rat
  - Application Route: inhalation (vapour)
  - Result: negative

Effects on foetal development: Test Type: Embryo-foetal development
- Species: Rat
- Application Route: inhalation (vapour)
- Result: negative

4-Nonylphenol, branched, ethoxylated:
Reproductive toxicity - Assessment: Some evidence of adverse effects on sexual function and fertility, and/or on development, based on animal experiments.
Amitraz Liquid Formulation

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

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

STOT - single exposure
May cause drowsiness or dizziness.

Components:

Solvent naphtha (petroleum), light aromatic:
- Assessment: May cause drowsiness or dizziness.

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.

Repeated dose toxicity

Components:

Solvent naphtha (petroleum), light aromatic:
- Species: Rat
- LOAEL: 500 mg/kg
- Application Route: Ingestion
Amitraz Liquid Formulation

Exposure time : 28 Days

4-Nonylphenol, branched, ethoxylated:
Species : Rat
LOAEL : 150 mg/kg
Application Route : Ingestion
Exposure time : 90 Days
Method : OPPTS 870.3100
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

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:
Solvent naphtha (petroleum), light aromatic:
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 Toxicity
Components:
Solvent naphtha (petroleum), light aromatic:
Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 8.2 mg/l
Toxicity to daphnia and other aquatic invertebrates

Exposure time: 96 h
Test substance: Water Accommodated Fraction

Toxicity to algae/aquatic plants

Method: OECD Test Guideline 202

NOELR: 2.6 mg/l
Exposure time: 21 d
Species: Daphnia magna (Water flea)
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 201

4-Nonylphenol, branched, ethoxylated:

Toxicity to fish

Method: OECD Test Guideline 203

M-Factor (Acute aquatic toxicity)

Toxicity to fish (Chronic toxicity)

Species: Pimephales promelas (fathead minnow)

M-Factor (Chronic aquatic toxicity)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)
12.2 Persistence and degradability

Components:

Solvent naphtha (petroleum), light aromatic:
Biodegradability : Result: Inherently biodegradable.
Biodegradation: 94 %
Exposure time: 25 d

4-Nonylphenol, branched, ethoxylated:
Biodegradability : Result: Not readily biodegradable.

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
Biodegradability : Biodegradation: 71 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Stability in water : Degradation half life (DT50): 2 d

12.3 Bioaccumulative potential

Components:

4-Nonylphenol, branched, ethoxylated:
Bioaccumulation : Species: Fish
Bioconcentration factor (BCF): < 100
Remarks: Based on data from similar materials

Amitraz (ISO):
Bioaccumulation : Species: Lepomis macrochirus (Bluegill sunfish)
Bioconcentration factor (BCF): 1,333

Partition coefficient: n-octanol/water

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
Partition coefficient: n-octanol/water

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. Empty containers retain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury and/or death. If not otherwise specified: Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADN: UN 1993
ADR: UN 1993
RID: UN 1993
IMDG: UN 1993
IATA: UN 1993

14.2 UN proper shipping name

ADN: FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic)
Amitraz Liquid Formulation

14.3 Transport hazard class(es)

ADR : FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic)
RID : FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic)
IMDG : FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic, Amitraz (ISO))
IATA : Flammable liquid, n.o.s. (Solvent naphtha (petroleum), light aromatic)

14.4 Packing group

ADR
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

RID
Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3
Tunnel restriction code : (D/E)

IMDG
Packing group : III
Hazard Identification Number : 30
Labels : 3

IATA
Packing group : III
EmS Code : F-E, S-E

IATA (Cargo)
Packing instruction (cargo aircraft) : 366
Packing instruction (LQ) : Y344
Packing group : III
Labels : Flammable Liquids

IATA (Passenger)
Packing instruction (passenger aircraft) : 355
Packing instruction (LQ) : Y344
Amitraz Liquid Formulation

Packing group : III
Labels : Flammable Liquids

14.5 Environmental hazards

ADN
Environmentally hazardous : yes

ADR
Environmentally hazardous : yes

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles (Annex XVII) : Conditions of restriction for the following entries should be considered: Number on list 3 4-Nonylphenol, branched, ethoxylated (Number on list 46b, 46a.) Solvent naphtha (petroleum), light aromatic (Number on list 29, 28)

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). : 4-Nonylphenol, branched, ethoxylated

REACH - List of substances subject to authorisation (Annex XIV) : 4-Nonylphenol, branched, ethoxylated

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EU) 2019/1021 on persistent organic pollutants (recast) : Not applicable

Regulation (EC) No 649/2012 of the European Parliament and the Council concerning the export and import of dangerous chemicals : Amitraz (ISO) 4-Nonylphenol, branched, ethoxylated

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
H226: Flammable liquid and vapour.
H302: Harmful if swallowed.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H336: May cause drowsiness or dizziness.
# Amitraz Liquid Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
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<td>1644322-00010</td>
<td>13.09.2019</td>
<td>09.05.2017</td>
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- **H340**: May cause genetic defects.
- **H350**: May cause cancer.
- **H361**: Suspected of damaging fertility or the unborn child.
- **H373**: May cause damage to organs through prolonged or repeated exposure.
- **H400**: Very toxic to aquatic life.
- **H410**: Very toxic to aquatic life with long lasting effects.
- **H411**: Toxic to aquatic life with long lasting effects.

**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
- Carc.: Carcinogenicity
- Flam. Liq.: Flammable liquids
- Muta.: Germ cell mutagenicity
- Repr.: Reproductive toxicity
- Skin Irrit.: Skin irritation
- 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 Labeling 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; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Sub-
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

Version 3.3  Revision Date: 23.03.2020  SDS Number: 1644322-00010  Date of last issue: 13.09.2019

stances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioac-
cumulative

Further information

Classification of the mixture:

<table>
<thead>
<tr>
<th>Substance</th>
<th>Classification</th>
<th>Procedure</th>
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<tbody>
<tr>
<td>Flam. Liq. 3</td>
<td>H226</td>
<td>Based on product data or assessment</td>
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<tr>
<td>Skin Irrit. 2</td>
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<td>Skin Sens. 1</td>
<td>H317</td>
<td>Calculation method</td>
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<tr>
<td>Muta. 1B</td>
<td>H340</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Carc. 1B</td>
<td>H350</td>
<td>Calculation method</td>
</tr>
<tr>
<td>Repr. 2</td>
<td>H361</td>
<td>Calculation method</td>
</tr>
<tr>
<td>STOT SE 3</td>
<td>H336</td>
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<tr>
<td>STOT RE 2</td>
<td>H373</td>
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<tr>
<td>Asp. Tox. 1</td>
<td>H304</td>
<td>Based on product data or assessment</td>
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<td>Aquatic Acute 1</td>
<td>H400</td>
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</tr>
<tr>
<td>Aquatic Chronic 1</td>
<td>H410</td>
<td>Calculation method</td>
</tr>
</tbody>
</table>

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