SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

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
Shotton Lane
NE23 3JU Cramlington NU - Great Britain
Telephone: 44 1 670 59 30 00
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)
Flammable liquids, Category 3 H226: Flammable liquid and vapour.
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)
Hazard pictograms : 

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

Components

<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>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Amitraz Liquid Formulation

**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. Get medical attention if irritation develops and persists.

For explanation of abbreviations see section 16.
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 only in an area equipped with explosion-proof exhaust ventila-
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>Occupational Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
</tr>
<tr>
<td>-------------</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

Version 3.3 Revision Date: 23.03.2020 SDS Number: 1644327-00010 Date of last issue: 13.09.2019 Date of first issue: 09.05.2017

<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>Solvent naphtha (petroleum), light aromatic</td>
<td>TWA</td>
<td>25 ppm</td>
<td>Long-term systemic effects</td>
<td>0.18 mg/m³</td>
</tr>
<tr>
<td>Amitraz (ISO)</td>
<td>Wipe limit</td>
<td>200 µg/100 cm²</td>
<td>Internal</td>
<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>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>

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>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>
</tbody>
</table>

| Marine water | 0.0024 mg/l |
| Intermittent use/release | 0.24 mg/l |
| Sewage treatment plant | 19.5 mg/l |
| Fresh water sediment | 0.211 mg/kg |
| Marine sediment | 0.0211 mg/kg |
| Soil | 0.0282 mg/kg |

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. Take note that the product is flammable, which may impact the selection of hand protection.

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. Equipment should conform to NS 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

- Appearance : liquid
- Colour : Colorless to pale yellow
- Odour : No data available
- Odour Threshold : No data available
- pH : No data available
- Melting point/freezing point : No data available
- Initial boiling point and boiling range : No data available
- Flash point : 56 °C
- Evaporation rate : No data available
- Flammability (solid, gas) : Not applicable
- Upper explosion limit / Upper flammability limit : No data available
- Lower explosion limit / Lower flammability limit : No data available
- Vapour pressure : No data available
- Relative vapour density : No data available
- Relative density : No data available
- Density : 0.92 - 1.20 g/cm³
- Solubility(ies) :
SAFETY DATA SHEET
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Amitraz Liquid Formulation

Version: 3.3
Revision Date: 23.03.2020
SDS Number: 1644327-00010
Date of last issue: 13.09.2019
Date of first issue: 09.05.2017

- 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.
# Amitraz Liquid Formulation

**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
- **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

Genotoxicity in vivo: Test Type: In vitro mammalian cell gene mutation test
Result: positive

Genotoxicity in vivo: Test Type: Sister chromatid exchange analysis in spermatogonia
Species: Mouse
Amitraz Liquid Formulation

Application Route: Intraperitoneal injection
Result: positive

Germ cell mutagenicity: Assessement: 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
Result: negative
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

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
Application Route
Exposure time
Result

Mouse
Skin contact
2 Years
positive

Carcinogenicity - Assessment

Sufficient evidence of carcinogenicity in animal experiments

Amitraz (ISO):

Species
Application Route
Exposure time
NOAEL
Result

Rat
Oral
2 Years
> 10,18 mg/kg body weight
negative

Species
Exposure time
LOAEL
Result
Target Organs

Mouse
2 Years
2,3 mg/kg body weight
positive
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 (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

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:  
Effects on foetal development: Test Type: Embryo-foetal development  
Species: Rabbit  
Application Route: Oral  
Developmental Toxicity: NOAEL: 5 mg/kg body weight  
Result: Effects on foetal development

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  
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 re-
garded 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 re-
garded 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
Exposure time: 96 h
Test substance: Water Accommodated Fraction

<table>
<thead>
<tr>
<th>Test substance: Toxicity to daphnia and other aquatic invertebrates</th>
<th>EL50 (Daphnia magna (Water flea)): 4,5 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time: 48 h</td>
<td>Method: OECD Test Guideline 202</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test substance: Toxicity to algae/aquatic plants</th>
<th>EL50 (Pseudokirchneriella subcapitata (microalgae)): 3,1 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time: 96 h</td>
<td>Method: OECD Test Guideline 201</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test substance: Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</th>
<th>NOELR: 2,6 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time: 21 d</td>
<td>Method: OECD Test Guideline 211</td>
</tr>
</tbody>
</table>

4-Nonylphenol, branched, ethoxylated:

<table>
<thead>
<tr>
<th>Test substance: Toxicity to fish</th>
<th>LC50 (Oryzias latipes (Orange-red killifish)): 8,2 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time: 96 h</td>
<td></td>
</tr>
</tbody>
</table>

Amitraz (ISO):

<table>
<thead>
<tr>
<th>Test substance: Toxicity to fish</th>
<th>LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,45 mg/l</th>
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</thead>
<tbody>
<tr>
<td>Exposure time: 96 h</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test substance: Toxicity to daphnia and other aquatic invertebrates</th>
<th>EC50 (Daphnia magna (Water flea)): 0,035 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time: 48 h</td>
<td>Method: OECD Test Guideline 202</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test substance: Toxicity to algae/aquatic plants</th>
<th>NOEC (Pseudokirchneriella subcapitata (green algae)): 0,04 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time: 91 h</td>
<td>Method: OECD Test Guideline 201</td>
</tr>
</tbody>
</table>

M-Factor (Acute aquatic toxicity): 10

<table>
<thead>
<tr>
<th>Test substance: Toxicity to fish (Chronic toxicity)</th>
<th>NOEC: 0,00148 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time: 32 d</td>
<td>Species: Pimephales promelas (fathead minnow)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test substance: Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</th>
<th>NOEC: 0,0011 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time: 21 d</td>
<td>Species: Daphnia magna (Water flea)</td>
</tr>
</tbody>
</table>

M-Factor (Chronic aquatic toxicity): 10
### 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

**Toxicity to fish**
- **LC₅₀ (Oncorhynchus mykiss (rainbow trout))**: 24 mg/l
  - Exposure time: 96 h
  - Method: OECD Test Guideline 203

**Toxicity to daphnia and other aquatic invertebrates**
- **EC₅₀ (Daphnia magna (Water flea))**: 40 mg/l
  - Exposure time: 48 h
  - Method: OECD Test Guideline 202

**Toxicity to algae/aquatic plants**
- **ErC₅₀ (Selenastrum capricornutum (green algae))**: > 110 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201
  - NOEC (Selenastrum capricornutum (green algae))**: 30 mg/l
  - Exposure time: 72 h
  - Method: OECD Test Guideline 201

**Toxicity to microorganisms**
- **EC₁₀ (Natural microorganism)**: 409 mg/l
  - Exposure time: 3 h
  - Method: OECD Test Guideline 209

### 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)
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

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<thead>
<tr>
<th>Code</th>
<th>Number</th>
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<tr>
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<tr>
<td>ADR</td>
<td>UN 1993</td>
</tr>
<tr>
<td>RID</td>
<td>UN 1993</td>
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<tr>
<td>IMDG</td>
<td>UN 1993</td>
</tr>
<tr>
<td>IATA</td>
<td>UN 1993</td>
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</table>

14.2 UN proper shipping name

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>ADN</td>
<td>FLAMMABLE LIQUID, N.O.S. (Solvent naphtha (petroleum), light aromatic)</td>
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</table>
### 14.3 Transport hazard class(es)

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<th></th>
<th>ADR</th>
<th>RID</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
</table>
| **ADR** | FLAMMABLE LIQUID, N.O.S.  
(Solvent naphtha (petroleum), light aromatic) | FLAMMABLE LIQUID, N.O.S.  
(Solvent naphtha (petroleum), light aromatic) | FLAMMABLE LIQUID, N.O.S.  
(Solvent naphtha (petroleum), light aromatic, Amitraz (ISO)) | Flammable liquid, n.o.s.  
(Solvent naphtha (petroleum), light aromatic) |

### 14.4 Packing group

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<th>IATA</th>
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<td>Flammable Liquids</td>
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<td>Flammable Liquids</td>
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<td><strong>IATA (Passenger)</strong></td>
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<td>Packing instruction (passenger aircraft)</td>
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SAFETY DATA SHEET
guided by Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

<table>
<thead>
<tr>
<th>Version</th>
<th>Revision Date:</th>
<th>SDS Number:</th>
<th>Date of last issue:</th>
<th>Date of first issue:</th>
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<td>3.3</td>
<td>23.03.2020</td>
<td>1644327-00010</td>
<td>13.09.2019</td>
<td>09.05.2017</td>
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</table>

- 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

<table>
<thead>
<tr>
<th>Quantity 1</th>
<th>Quantity 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.000 t</td>
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</tbody>
</table>

**P5c**
FLAMMABLE LIQUIDS

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</thead>
<tbody>
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</table>

**E1**
ENVIRONMENTAL HAZARDS

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<th>Quantity 2</th>
</tr>
</thead>
<tbody>
<tr>
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<td>25.000 t</td>
</tr>
</tbody>
</table>

Petroleum products: (a) gasolines and naphthas, (b) kerosenes (including jet fuels), (c) gas oils (including diesel fuels, home heating oils and gas oil blending streams), (d) heavy fuel oils (e) alternative fuels serving the same purposes and with similar properties as regards flammability and environmental hazards as the products referred to in points (a) to (d)

Other regulations:
Take note of Directive 92/85/EEC regarding maternity protection or stricter national regulations, where applicable.
Young people under the age of 18 are not allowed to use or be exposed to the product professionally. Young people above the age of 15 are, however, except from this rule if the product is a necessary part of their education.

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**
- **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.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Amitraz Liquid Formulation

Version 3.3
Revision Date: 23.03.2020
SDS Number: 1644327-00010
Date of last issue: 13.09.2019
Date of first issue: 09.05.2017

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.
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
FOR-2011-12-06-1358 : Norway. Occupational Exposure limits
FOR-2011-12-06-1358 / : Long term exposure limit
TWA

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 - Korean 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;
### Classification of the mixture:

<table>
<thead>
<tr>
<th>Property</th>
<th>Classification</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flam. Liq. 3</td>
<td>H226</td>
<td>Based on product data or assessment</td>
</tr>
<tr>
<td>Skin Irrit. 2</td>
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<td>Calculation method</td>
</tr>
<tr>
<td>Skin Sens. 1</td>
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</tr>
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<td>Muta. 1B</td>
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<td>Carc. 1B</td>
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<td>Repr. 2</td>
<td>H361</td>
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</tr>
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<td>STOT RE 2</td>
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<td>Asp. Tox. 1</td>
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<tr>
<td>Aquatic Chronic 1</td>
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</tr>
</tbody>
</table>

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.