SAFETY DATA SHEET
Diazinon Formulation

SECTION 1. IDENTIFICATION

Product name : Diazinon Formulation

Manufacturer or supplier's details
Company name of supplier : Merck & Co., Inc
Address : 126 E. Lincoln Avenue
Rahway, New Jersey U.S.A. 07065
Telephone : 908-740-4000
Emergency telephone : 1-908-423-6000
E-mail address : EHSDATASTEWARD@merck.com

Recommended use of the chemical and restrictions on use
Recommended use : Veterinary product
Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute toxicity (Oral) : Category 4
Skin irritation : Category 2
Serious eye damage : Category 1
Skin sensitization : Category 1
Germ cell mutagenicity : Category 1B
Carcinogenicity : Category 1B
Specific target organ toxicity - single exposure : Category 1 (Nervous system)
Specific target organ toxicity - single exposure : Category 3
Aspiration hazard : Category 1

GHS label elements
Hazard pictograms : 
Signal Word : Danger
Hazard Statements:
- H302 Harmful if swallowed.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H318 Causes serious eye damage.
- H336 May cause drowsiness or dizziness.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H370 Causes damage to organs (Nervous system).
- H373 May cause damage to organs (Nervous system, nasal cavity) through prolonged or repeated exposure.

Precautionary Statements:
- Prevention:
  - P201 Obtain special instructions before use.
  - P202 Do not handle until all safety precautions have been read and understood.
  - P260 Do not breathe mist or vapors.
  - P264 Wash skin thoroughly after handling.
  - P270 Do not eat, drink or smoke when using this product.
  - P271 Use only outdoors or in a well-ventilated area.
  - P280 Wear protective gloves, protective clothing, eye protection and face protection.
- Response:
  - P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER.
  - P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
  - P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a doctor if you feel unwell.
  - P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER.
  - P307 + P311 IF exposed: Call a doctor.
  - P331 Do NOT induce vomiting.
  - P333 + P335 If skin irritation or rash occurs: Get medical attention.
  - P362 + P364 Take off contaminated clothing and wash it before reuse.
- Storage:
  - P405 Store locked up.
- Disposal:
  - P501 Dispose of contents and container to an approved waste disposal plant.

Other hazards:
None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS
SAFETY DATA SHEET
Diazinon Formulation

Substance / Mixture : Mixture

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazinon</td>
<td>333-41-5</td>
<td>50</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>20.2</td>
</tr>
<tr>
<td>Nonylphenol, ethoxylated</td>
<td>9016-45-9</td>
<td>20</td>
</tr>
<tr>
<td>7-Oxabicyclo[4.1.0]hept-3-ylmethyl7-oxabicyclo[4.1.0]heptane-3-carboxylate</td>
<td>2386-87-0</td>
<td>9.8</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.

If inhaled : If inhaled, remove to fresh air.
Get medical attention.

In case of skin contact : In case of contact, immediately flush skin with plenty of water 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 : 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 center immediately.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed : Harmful if swallowed.
May be fatal if swallowed and enters airways.
Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye damage.
May cause drowsiness or dizziness.
May cause genetic defects.
May cause cancer.
Causes damage to organs.
May cause damage to organs through prolonged or repeated exposure.

Protection of first-aiders : First Aid responders should pay attention to self-protection, and use the recommended personal protective equipment when the potential for exposure exists (see section 8).

Notes to physician : Treat symptomatically and supportively.

SECTION 5. FIRE-FIGHTING MEASURES
SAFETY DATA SHEET

Diazinon Formulation

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

Unsuitable extinguishing media: None known.

Specific hazards during fire fighting: Exposure to combustion products may be a hazard to health.

Hazardous combustion products: Carbon oxides
Nitrogen oxides (NOx)
Sulfur oxides
Oxides of phosphorus

Specific extinguishing methods: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Use water spray to cool unopened containers.
Remove undamaged containers from fire area if it is safe to do so.
Evacuate area.

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

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Use personal protective equipment.
Follow safe handling advice (see section 7) and personal protective equipment recommendations (see section 8).

Environmental precautions: Avoid release to the environment.
Prevent further leakage or spillage if safe to do so.
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.

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

SECTION 7. HANDLING AND STORAGE

Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSO

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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 mist or vapors.
- Do not swallow.
- Do not get in eyes.
- Wash skin thoroughly after handling.
- Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment.
- Keep container tightly closed.
- Do not eat, drink or smoke when using this product.
- Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage:
- Keep in properly labeled containers.
- Store locked up.
- Keep tightly closed.
- Keep in a cool, well-ventilated place.
- Store in accordance with the particular national regulations.

Materials to avoid:
- Do not store with the following product types:
  - Strong oxidizing agents
  - Self-reactive substances and mixtures
  - Organic peroxides
  - Explosives
  - Gases

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazinon</td>
<td>333-41-5</td>
<td>TWA (Inhalable fraction and vapor)</td>
<td>0.01 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>0.1 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td>Solvent naphtha (petroleum), light aromatic</td>
<td>64742-95-6</td>
<td>TWA</td>
<td>500 ppm 2,000 mg/m³</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>200 mg/m³ (total hydrocarbon vapor)</td>
<td>ACGIH</td>
</tr>
</tbody>
</table>

#### Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Biological specimen</th>
<th>Sampling time</th>
<th>Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazinon</td>
<td>333-41-5</td>
<td>Acetylcholinesterase activity</td>
<td>In red blood cells</td>
<td>End of shift</td>
<td>70 % of an individual's baseline</td>
<td>ACGIH BEI</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Butyrylcholinesterase activity</td>
<td>In serum or plasma</td>
<td>End of shift</td>
<td>60 % of an individual's baseline</td>
<td>ACGIH BEI</td>
</tr>
</tbody>
</table>
Engineering measures: Use appropriate engineering controls and manufacturing technologies to control airborne concentrations (e.g., dripless 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
Respiratory protection: General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn. Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection
Material: Chemical-resistant gloves
Remarks: Consider double gloving.

Eye protection: Wear safety glasses with side shields or goggles. If the work environment or activity involves dusty conditions, mists or aerosols, wear the appropriate goggles. Wear a faceshield or other full face protection if there is a potential for direct contact to the face with dusts, mists, or aerosols.

Skin and body protection: Work uniform or laboratory coat. Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces. Use appropriate degowning techniques to remove potentially contaminated clothing.

Hygiene measures: If exposure to chemical is likely during typical use, provide eye flushing systems and safety showers close to the working place. When using do not eat, drink or smoke. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before re-use. The effective operation of a facility should include review of engineering controls, proper personal protective equipment, appropriate degowning and decontamination procedures, industrial hygiene monitoring, medical surveillance and the use of administrative controls.
SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid
Color : yellow
Odor : characteristic
Odor 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 : No data available
Evaporation rate : No data available
Flammability (solid, gas) : Not applicable
Flammability (liquids) : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapor pressure : No data available
Relative vapor density : No data available
Relative density : No data available
Density : 1,030 - 1,090 g/cm³
Solubility(ies)
Water solubility : No data available
Partition coefficient: n-octanol/water : Not applicable
Autoignition temperature : No data available
Decomposition temperature : No data available
Viscosity
Viscosity, kinematic : No data available
Explosive properties : Not explosive
Oxidizing properties : The substance or mixture is not classified as oxidizing.
Molecular weight : No data available
Particle size : Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not classified as a reactivity hazard.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Can react with strong oxidizing agents.
Conditions to avoid : None known.
Incompatible materials : Oxidizing agents
Hazardous decomposition products : No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity
Harmful if swallowed.

Product:

Acute oral toxicity : Acute toxicity estimate: 1,139 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: 5,000 mg/kg
Method: Calculation method

Components:

Diazinon:

Acute oral toxicity : LD50 (Rat): 1,139 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5,437 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Acute dermal toxicity : LD50 (Rabbit): > 2,020 mg/kg

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: vapor

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg
Nonylphenol, ethoxylated:

Acute oral toxicity: LD50 (Rat): 500 - 2,000 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:

Diazinon:
Species: Rabbit
Result: Mild skin irritation

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

Nonylphenol, ethoxylated:
Species: Rabbit
Method: OECD Test Guideline 404
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
Causes serious eye damage.

Components:

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

Nonylphenol, ethoxylated:
Species: Rabbit
Result: Irreversible effects on the eye
Method: OECD Test Guideline 405

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
Species: Rabbit
Result: No eye irritation
Method: OECD Test Guideline 405

Respiratory or skin sensitization
Skin sensitization
May cause an allergic skin reaction.
Respiratory sensitization
Not classified based on available information.

Components:
Diazinon:
| Test Type  | Buehler Test |
| Routes of exposure | Skin contact |
| Species | Guinea pig |
| Result | negative |

Solvent naphtha (petroleum), light aromatic:
| Test Type  | Buehler Test |
| Routes of exposure | Skin contact |
| Species | Guinea pig |
| Result | negative |

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

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
| Test Type  | Maximization Test |
| Routes of exposure | Skin contact |
| Species | Guinea pig |
| Result | positive |
| Assessment | Probability or evidence of skin sensitization in humans |
**SAFETY DATA SHEET**

**Diazinon 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>
</tr>
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<tbody>
<tr>
<td>2.0</td>
<td>04/04/2023</td>
<td>7699415-00006</td>
<td>10/01/2022</td>
<td>12/22/2020</td>
</tr>
</tbody>
</table>

**Germ cell mutagenicity**

May cause genetic defects.

**Components:**

**Diazinon:**

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: In vitro mammalian cell gene mutation test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Chromosome aberration test in vitro</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

**Solvent naphtha (petroleum), light aromatic:**

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: In vitro mammalian cell gene mutation test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: positive</td>
</tr>
</tbody>
</table>

**Nonylphenol, ethoxylated:**

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Sister chromatid exchange analysis in spermatogonia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Species: Mouse</td>
</tr>
<tr>
<td></td>
<td>Application Route: Intraperitoneal injection</td>
</tr>
<tr>
<td></td>
<td>Result: positive</td>
</tr>
</tbody>
</table>

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: Bacterial reverse mutation assay (AMES)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: negative</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Genotoxicity in vitro</th>
<th>Test Type: In vitro mammalian cell gene mutation test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Result: positive</td>
</tr>
</tbody>
</table>

*Remarks:* Based on data from similar materials
## Genotoxicity in vivo

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Type: In vitro sister chromatid exchange assay in mammalian cells</td>
<td>positive</td>
</tr>
<tr>
<td>Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)</td>
<td>positive</td>
</tr>
<tr>
<td>Test Type: Unscheduled DNA synthesis (UDS) test with mammalian liver cells in vivo</td>
<td>positive</td>
</tr>
<tr>
<td>Test Type: Micronucleus test</td>
<td>negative</td>
</tr>
<tr>
<td>Test Type: Transgenic rodent somatic cell gene mutation assay</td>
<td>positive</td>
</tr>
</tbody>
</table>

### Germ cell mutagenicity - Assessment
- Positive result(s) from in vivo mammalian somatic cell mutagenicity tests.

### Carcinogenicity
- May cause cancer.

### Components:

#### Diazinon:
- **Species**: Rat
- **Application Route**: Ingestion
- **Exposure time**: 104 weeks
- **Result**: negative
- **Carcinogenicity - Assessment**: Sufficient evidence of carcinogenicity in animal experiments

#### 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

#### 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
- **Species**: Mouse
**SAFETY DATA SHEET**

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<table>
<thead>
<tr>
<th>Application Route</th>
<th>Skin contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>29 Months</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

**IARC**

Group 2A: Probably carcinogenic to humans

Diazinon

333-41-5

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**NTP**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Components:**

**Diazinon:**

Effects on fertility: Test Type: Three-generation study  
Species: Rat  
Application Route: Ingestion  
Result: negative

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

**Solvent naphtha (petroleum), light aromatic:**

Effects on fertility: Test Type: Reproduction/Developmental toxicity screening test  
Species: Rat  
Application Route: Inhalation (vapor)  
Result: negative

Effects on fetal development: Test Type: Embryo-fetal development  
Species: Rat  
Application Route: Inhalation (vapor)  
Result: negative

**7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:**

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

**STOT-single exposure**

May cause drowsiness or dizziness.  
Causes damage to organs (Nervous system).  

---  

Version: 2.0  
Revision Date: 04/04/2023  
SDS Number: 7699415-00006  
Date of last issue: 10/01/2022  
Date of first issue: 12/22/2020
Components:

Diazinon:
- Routes of exposure: Ingestion
- Target Organs: Nervous system
- Assessment: Shown to produce significant health effects in animals at concentrations of 300 mg/kg bw or less.

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

STOT-repeated exposure
- May cause damage to organs (Nervous system, nasal cavity) through prolonged or repeated exposure.

Components:

Diazinon:
- Routes of exposure: Ingestion
- Target Organs: Nervous system
- Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
- Routes of exposure: Ingestion
- Target Organs: nasal cavity
- Assessment: Shown to produce significant health effects in animals at concentrations of >10 to 100 mg/kg bw.

Repeated dose toxicity

Components:

Diazinon:
- Species: Rat
- NOAEL: 0.3 mg/kg
- LOAEL: 15 mg/kg
- Application Route: Ingestion
- Exposure time: 90 Days

- Species: Rat
- NOAEL: 0.1 mg/l
- LOAEL: 0.75 mg/l
- Application Route: inhalation (dust/mist/fume)
- Exposure time: 28 Days

Solvent naphtha (petroleum), light aromatic:
- Species: Rat
- LOAEL: 500 mg/kg
- Application Route: Ingestion
- Exposure time: 28 Days
7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>5 mg/kg</td>
</tr>
<tr>
<td>LOAEL</td>
<td>50 mg/kg</td>
</tr>
<tr>
<td>Application Route</td>
<td>Ingestion</td>
</tr>
<tr>
<td>Exposure time</td>
<td>90 Days</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 408</td>
</tr>
</tbody>
</table>

**Aspiration toxicity**

May be fatal if swallowed and enters airways.

**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:**

**Diazinon:**

**Inhalation**

Symptoms: carcinogenic effects

---

**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Components:**

**Diazinon:**

**Toxicity to fish**

LC50 (Oncorhynchus mykiss (rainbow trout)): 0.09 mg/l
Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates**

EC50 (Ceriodaphnia dubia (water flea)): 0.000164 mg/l
Exposure time: 48 h

**Toxicity to fish (Chronic toxicity)**

NOEC (Pimephales promelas (fathead minnow)): 0.092 mg/l
Exposure time: 34 d

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

NOEC (Daphnia magna (Water flea)): 0.00017 mg/l
Exposure time: 21 d

**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

**Toxicity to daphnia and other aquatic invertebrates**

EL50 (Daphnia magna (Water flea)): 4.5 mg/l
Exposure time: 48 h
Test substance: Water Accommodated Fraction
Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants:
- EL50 (Pseudokirchneriella subcapitata (microalgae)): 3.1 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 201
- NOELR (Pseudokirchneriella subcapitata (microalgae)): 0.5 mg/l
  Exposure time: 96 h
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
- NOELR (Daphnia magna (Water flea)): 2.6 mg/l
  Exposure time: 21 d
  Test substance: Water Accommodated Fraction
  Method: OECD Test Guideline 211

Nonylphenol, ethoxylated:
- EC50 (Daphnia sp. (Water flea)): 1.82 mg/l
  Exposure time: 48 h

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:
- LC50 (Oncorhynchus mykiss (rainbow trout)): 24 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 203
- EC50 (Daphnia magna (Water flea)): 40 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202
- ErC50 (Raphidocelis subcapitata (freshwater green algae)): > 110 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201
- NOEC (Raphidocelis subcapitata (freshwater green algae)): 30 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201
- EC10 (activated sludge): 409 mg/l
  Exposure time: 3 h
  Method: OECD Test Guideline 209

Persistence and degradability:

Components:

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

**Nonylphenol, ethoxylated:**

<table>
<thead>
<tr>
<th>Biodegradability</th>
<th>Result: Readily biodegradable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodegradation:</td>
<td>97 %</td>
</tr>
<tr>
<td>Exposure time:</td>
<td>30 d</td>
</tr>
</tbody>
</table>

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

<table>
<thead>
<tr>
<th>Biodegradability</th>
<th>Result: Not readily biodegradable.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biodegradation:</td>
<td>71 %</td>
</tr>
<tr>
<td>Exposure time:</td>
<td>28 d</td>
</tr>
<tr>
<td>Method:</td>
<td>OECD Test Guideline 301B</td>
</tr>
</tbody>
</table>

**Bioaccumulative potential**

**Components:**

**Diazinon:**

<table>
<thead>
<tr>
<th>Bioaccumulation</th>
<th>Species: Cyprinus carpio (Carp)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Bioconcentration factor (BCF): 46.9</td>
</tr>
</tbody>
</table>

| Partition coefficient: n-octanol/water | log Pow: 3.69 |

**Nonylphenol, ethoxylated:**

| Partition coefficient: n-octanol/water | log Pow: 4.48 |

7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate:

| Partition coefficient: n-octanol/water | log Pow: 1.34 |
| Method: OECD Test Guideline 107 |

**Mobility in soil**
No data available

**Other adverse effects**

**Components:**

**Nonylphenol, ethoxylated:**

| Results of PBT and vPvB assessment | This substance is considered to be persistent, bioaccumulating and toxic (PBT). This substance is considered to be very persistent and very bioaccumulating (vPvB). |

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal methods**

| Waste from residues | Dispose of in accordance with local regulations. Do not dispose of waste into sewer. |
| Contaminated packaging | Empty containers should be taken to an approved waste handling site for recycling or disposal. |
If not otherwise specified: Dispose of as unused product.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diazinon)
Class : 9
Packing group : III
Labels : 9

IATA-DGR
UN/ID No. : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Diazinon)
Class : 9
Packing group : III
Labels : Miscellaneous
Packing instruction (cargo aircraft) : 964
Packing instruction (passenger aircraft) : 964
Environmentally hazardous : yes

IMDG-Code
UN number : UN 3082
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Diazinon)
Class : 9
Packing group : III
Labels : 9
EmS Code : F-A, S-F
Marine pollutant : yes

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

Domestic regulation

49 CFR
UN/ID/NA number : UN 3082
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s. (Diazinon)
Class : 9
Packing group : III
Labels : CLASS 9
ERG Code : 171
Marine pollutant : yes (Diazinon)
Remarks : THE ABOVE INFORMATION ONLY APPLIES TO PACKAGE SIZES WHERE THE HAZARDOUS SUBSTANCE MEETS THE REPORTABLE QUANTITY.
Special precautions for user
The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diazinon</td>
<td>333-41-5</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

SARA 304 Extremely Hazardous Substances Reportable Quantity
This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity
This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards:
- Acute toxicity (any route of exposure)
- Respiratory or skin sensitization
- Germ cell mutagenicity
- Carcinogenicity
- Specific target organ toxicity (single or repeated exposure)
- Aspiration hazard
- Skin corrosion or irritation
- Serious eye damage or eye irritation

SARA 313:
The following components are subject to reporting levels established by SARA Title III, Section 313:
- Diazinon 333-41-5 50 %
- Nonylphenol, ethoxylated 9016-45-9 20 %

US State Regulations

Pennsylvania Right To Know
- Diazinon 333-41-5
- Solvent naphtha (petroleum), light aromatic 64742-95-6
- Nonylphenol, ethoxylated 9016-45-9
- 7-Oxabicyclo[4.1.0]hept-3-ylmethyl 7-oxabicyclo[4.1.0]heptane-3-carboxylate 2386-87-0

California List of Hazardous Substances
- Diazinon 333-41-5

California Permissible Exposure Limits for Chemical Contaminants
- Diazinon 333-41-5

The ingredients of this product are reported in the following inventories:
- DSL: not determined
- AICS: not determined
SAFETY DATA SHEET
Diazinon Formulation

SECTION 16. OTHER INFORMATION

Further information

**NFPA 704:**

- **Flammability:** 1
- **Health:** 3
- **Instability:** 0
- **Special hazard:**

**HMIS® IV:**

- **HEALTH:** *
- **FLAMMABILITY:** 1
- **PHYSICAL HAZARD:** 0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

- **ACGIH:** USA. ACGIH Threshold Limit Values (TLV)
- **ACGIH BEI:** ACGIH - Biological Exposure Indices (BEI)
- **NIOSH REL:** USA. NIOSH Recommended Exposure Limits
- **OSHA Z-1:** USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- **ACGIH / TWA:** 8-hour, time-weighted average
- **NIOSH REL / TWA:** Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
- **OSHA Z-1 / TWA:** 8-hour time weighted average

- **AIIC:** Australian Inventory of Industrial Chemicals
- **ASTM:** American Society for the Testing of Materials
- **bw:** Body weight
- **CERCLA:** Comprehensive Environmental Response, Compensation, and Liability Act
- **CMR:** Carcinogen, Mutagen or Reproductive Toxicant
- **DIN:** Standard of the German Institute for Standardisation
- **DOT:** Department of Transportation
- **DSD:** Domestic Substances List (Canada)
- **ECx:** Concentration associated with x% response
- **EHS:** Extremely Hazardous Substance
- **ELx:** Loading rate associated with x% response
- **EmS:** Emergency Schedule
- **ENCS:** Existing and New Chemical Substances (Japan)
- **ErCx:** Concentration associated with x% growth rate response
- **ERG:** Emergency Response Guide
- **GHS:** Globally Harmonized System
- **GLP:** Good Laboratory Practice
- **HMIS:** Hazardous Materials Identification System
- **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
- **IECSS:** 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 Chemi-
Sources of key data used to compile the Material Safety Data Sheet:

Revision Date: 04/04/2023

Items where changes have been made to the previous version are highlighted in the body of this document by two vertical lines.

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.

US / Z8