SAFETY DATA SHEET  
according to the Hazardous Products Regulations

Diminazene / Phenazone Formulation

SECTION 1. IDENTIFICATION

Product name : Diminazene / Phenazone Formulation  
Other means of identification : No data available

Manufacturer or supplier's details

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

Recommended use of the chemical and restrictions on use

Recommended use : Veterinary product  
Restrictions on use : Not applicable

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the Hazardous Products Regulations

Skin irritation : Category 2  
Specific target organ toxicity - single exposure (Oral) : Category 1 (Brain)  
Specific target organ toxicity - repeated exposure (Oral) : Category 1 (Brain)

GHS label elements

Hazard pictograms : ![危険物マーク]

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.  
H370 Causes damage to organs (Brain) if swallowed.  
H372 Causes damage to organs (Brain) through prolonged or repeated exposure if swallowed.

Precautionary Statements

Prevention:  
P260 Do not breathe mist or vapors.  
P264 Wash skin thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
P280 Wear protective gloves.

Response:  
P302 + P352 IF ON SKIN: Wash with plenty of water.  
P308 + P311 IF exposed or concerned: Call a doctor.
P332 + P313 If skin irritation 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

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Mixture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td></td>
</tr>
<tr>
<td>Chemical name</td>
<td>Common Name/Synonym</td>
</tr>
<tr>
<td>Diminazene</td>
<td>No data available</td>
</tr>
<tr>
<td>Phenazone</td>
<td>3H-Pyrazol-3-one, 1,2-dihydro-1,5-dimethyl-2-phenyl-</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 if symptoms occur.

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.

If swallowed:
If swallowed, DO NOT induce vomiting unless directed to do so by medical personnel.
Get medical attention.
Rinse mouth thoroughly with water.
Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and:
Causes skin irritation.
Causes damage to organs if swallowed.
**SAFETY DATA SHEET**
according to the Hazardous Products Regulations

**Diminazene / Phenazone 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>
</thead>
<tbody>
<tr>
<td>3.5</td>
<td>09/30/2023</td>
<td>4834913-00011</td>
<td>04/04/2023</td>
<td>09/10/2019</td>
</tr>
</tbody>
</table>

**delayed**
Causes damage to organs through prolonged or repeated exposure if swallowed.

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

**Notes to physician:**
Treat symptomatically and supportively.

### SECTION 5. FIRE-FIGHTING MEASURES

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

**Unsuitable extinguishing 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)

**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/PERSONAL PROTECTION section.

Local/Total ventilation

Use only with adequate ventilation.

Advice on safe handling

Do not get on skin or clothing.
Do not breathe mist or vapors.
Do not swallow.
Avoid contact with 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
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.
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>Diminazene</td>
<td>536-71-0</td>
<td>TWA</td>
<td>200 µg/m3 (OEB 2)</td>
<td>Internal</td>
</tr>
</tbody>
</table>

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.
Laboratory operations do not require special containment.

Personal protective equipment

Respiratory protection

If adequate local exhaust ventilation is not available or exposure assessment demonstrates exposures outside the recommended guidelines, use respiratory protection.

Filter type

Particulates type
Hand protection
Material: Chemical-resistant gloves

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.

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.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: yellow-orange
Odor: No data available
Odor Threshold: No data available
pH: 5.0 - 7.0
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
SAFETY DATA SHEET
according to the Hazardous Products Regulations

Diminazene / Phenazone Formulation

Relative vapor density: No data available
Relative density: No data available
Density: No data available
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
Not classified based on available information.

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

Diminazene:
Acute toxicity (other routes of administration):
- LD50 (Rat): 663 mg/kg
  Application Route: Subcutaneous
- LD50 (Mouse): 258 mg/kg
  Application Route: Subcutaneous
- LDLo (Dog): 20 mg/kg
  Application Route: Intramuscular

Phenazone:
Acute oral toxicity:
- LD50 (Cat): 1,250 mg/kg

Skin corrosion/irritation
Causes skin irritation.

Components:

Diminazene:
Species:
- Rabbit
Result:
- Skin irritation

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

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Components:

Diminazene:
Genotoxicity in vitro:
- Test Type: Microbial mutagenesis assay (Ames test)
  Test system: Salmonella typhimurium
  Method: Mutagenicity (Salmonella typhimurium - reverse mutation assay)
  Result: negative
- Test Type: Micronucleus test
  Test system: Mouse
  Result: negative
- Test Type: In vitro mammalian cell gene mutation test
SAFETY DATA SHEET
according to the Hazardous Products Regulations

Diminazene / Phenazone Formulation

Test system: Chinese hamster cells
Result: negative

Genotoxicity in vivo:
Test Type: Micronucleus test
Species: Mouse
Result: negative

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

Phenazone:
Genotoxicity in vitro:
Test Type: Bacterial reverse mutation assay (AMES)
Result: negative

Genotoxicity in vivo:
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Ingestion
Method: OECD Test Guideline 474
Result: negative

Test Type: Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
Species: Rat
Application Route: Ingestion
Result: negative

Carcinogenicity:
Not classified based on available information.

Reproductive toxicity:
Not classified based on available information.

Components:

Diminazene:
Effects on fetal development:
Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Oral
General Toxicity Maternal: LOAEL: 800 mg/kg body weight
Developmental Toxicity: LOAEL: 800 mg/kg body weight
Symptoms: Skeletal malformations, Embryo-fetal toxicity.

Test Type: reproductive and developmental toxicity study
Species: Rat
Application Route: Oral
General Toxicity Maternal: NOAEL: 400 mg/kg body weight
Developmental Toxicity: NOAEL: 400 mg/kg body weight

Reproductive toxicity - Assessment:
Experiments have shown reproductive toxicity effects on laboratory animals.

Phenazone:
Effects on fertility
Test Type: Two-generation reproduction toxicity study
Species: Rat
Application Route: Ingestion
Result: negative

**STOT-single exposure**
Causes damage to organs (Brain) if swallowed.

**Components:**

**Diminazene:**

- Routes of exposure: Oral
- Target Organs: Brain
- Assessment: Shown to produce significant health effects in animals at concentrations of 1000 mg/kg bw or less.

**STOT-repeated exposure**
Causes damage to organs (Brain) through prolonged or repeated exposure if swallowed.

**Components:**

**Diminazene:**

- Routes of exposure: Oral
- Target Organs: Brain
- Assessment: Causes damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity**

**Components:**

**Diminazene:**

- Species: Rat
- NOAEL: 63 mg/kg
- Application Route: Oral
- Exposure time: 3 Months
- Species: Rat
- NOAEL: 300 mg/kg
- Application Route: Oral
- Exposure time: 9 Months
- Species: Dog
- LOAEL: 60 mg/kg
- Application Route: Oral
- Exposure time: 9 Months
- Target Organs: Brain, Testis
- Symptoms: Disorder

**Phenazone:**

- Species: Dog
- NOAEL: 63 mg/kg
Application Route: Ingestion
Exposure time: 6 Months

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:

Diminazene:
Ingestion:
Target Organs: Stomach
  Symptoms: Vomiting
Target Organs: Central nervous system
  Symptoms: paralysis
Target Organs: Immune system
  Symptoms: Fever

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Phenazone:
Toxicity to fish:
  LC50 (Oryzias latipes (Japanese medaka)): > 100 mg/l
  Exposure time: 96 h
  Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates:
  EC50 (Daphnia magna (Water flea)): >= 1,000 mg/l
  Exposure time: 48 h
  Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants:
  ErC50 (Selenastrum capricornutum (green algae)): > 1,000 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201
  NOEC (Selenastrum capricornutum (green algae)): 10 mg/l
  Exposure time: 72 h
  Method: OECD Test Guideline 201

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):
  NOEC (Daphnia magna (Water flea)): 100 mg/l
  Exposure time: 21 d
  Method: OECD Test Guideline 211

Toxicity to microorganisms:
  EC50: 16,900 mg/l
  Exposure time: 48 h

Persistence and degradability

Components:

Phenazone:
Biodegradability: Result: Not inherently biodegradable.
  Biodegradation: 50%
  Exposure time: 20 d

Bioaccumulative potential

Components:

Phenazone:
  Partition coefficient: n-octanol/water:
    log Pow: 0.38

Mobility in soil
  No data available

Other adverse effects
  No data available

SECTION 13. DISPOSAL CONSIDERATIONS

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

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
  Not regulated as a dangerous good

IATA-DGR
  Not regulated as a dangerous good

IMDG-Code
  Not regulated as a dangerous good

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

Domestic regulation

TDG
  Not regulated as a dangerous good

Special precautions for user
  Not applicable

SECTION 15. REGULATORY INFORMATION

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

AICS: not determined
SAFETY DATA SHEET
according to the Hazardous Products Regulations

Diminazene / Phenazone Formulation

Version 3.5  Revision Date: 09/30/2023  SDS Number: 4834913-00011  Date of last issue: 04/04/2023  Date of first issue: 09/10/2019

DSL : not determined
IECSC : not determined

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International 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; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System


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

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is designed only as a
guidance for safe handling, use, processing, storage, transportation, disposal and release and shall not be considered a warranty or quality specification of any type. The information provided relates only to the specific material identified at the top of this SDS and may not be valid when the SDS material is used in combination with any other materials or in any process, unless specified in the text. Material users should review the information and recommendations in the specific context of their intended manner of handling, use, processing and storage, including an assessment of the appropriateness of the SDS material in the user’s end product, if applicable.