SAFETY DATA SHEET

Sulfadiazine (40%) / Trimethoprim (8%) Liquid Formulation

Version 11.0  Revision Date: 2021/08/27  SDS Number: 508646-00018  Date of last issue: 2021/03/03
Date of first issue: 2016/02/10

1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name: Sulfadiazine (40%) / Trimethoprim (8%) Liquid Formulation

Supplier’s company name, address and phone number

Company name of supplier: MSD
Address: Kumagaya, Saitama Prefecture, Xicheng 810 MSD Co., Ltd. Menuma factory
Telephone: 048-588-8411
E-mail address: EHSDATASTEWARD@msd.com
Emergency telephone number: +1-908-423-6000

Recommended use of the chemical and restrictions on use
Recommended use: Veterinary product

2. HAZARDS IDENTIFICATION

GHS classification of chemical product
Skin corrosion/irritation: Sub-category 1A
Serious eye damage/eye irritation: Category 1
Respiratory sensitisation: Category 1
Reproductive toxicity: Category 2
Specific target organ toxicity - single exposure: Category 3
Specific target organ toxicity - repeated exposure: Category 2 (Bone marrow)
Short-term (acute) aquatic hazard: Category 1
Long-term (chronic) aquatic hazard: Category 1

GHS label elements
Hazard pictograms:

Signal word: Danger
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Hazard statements:
H314 Causes severe skin burns and eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H361d Suspected of damaging the unborn child.
H373 May cause damage to organs (Bone marrow) through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

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 vapours.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284 Wear respiratory protection.

Response:
P301 + P330 + P331 + P310 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353 + P310 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a POISON CENTER/ doctor.
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/ doctor.
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification
None known.

3. COMPOSITION/INFORMATION ON INGREDIENTS
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Substance / Mixture : Mixture

Components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
<th>ENCS No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfadiazine</td>
<td>68-35-9</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Trimethoprim</td>
<td>738-70-5</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Sodium hydroxide</td>
<td>1310-73-2</td>
<td>5.5</td>
<td>1-410</td>
</tr>
<tr>
<td>2,2'-Iminodiethanol</td>
<td>111-42-2</td>
<td>0.6</td>
<td>2-302, 2-354</td>
</tr>
</tbody>
</table>

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. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

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 immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lens, if worn. Get medical attention immediately.

If swallowed : If swallowed, DO NOT induce vomiting. If vomiting occurs have person lean forward. Call a physician or poison control centre immediately. Rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed : Causes serious eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Suspected of damaging the unborn child. May cause damage to organs through prolonged or repeated exposure. Causes severe burns. Causes digestive tract burns. Excessive exposure may aggravate preexisting asthma and other respiratory disorders (e.g. emphysema, bronchitis, reactive airways dysfunction syndrome).

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.
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5. FIREFIGHTING MEASURES

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

Unsuitable extinguishing media: None known.

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

Hazardous combustion products: Carbon oxides
Metal oxides

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

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 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.

7. HANDLING AND STORAGE

Handling
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Technical measures: See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section.

Local/Total ventilation: If sufficient ventilation is unavailable, use with local exhaust ventilation.

Advice on safe handling:
- Do not get on skin or clothing.
- Do not breathe mist or vapours.
- 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.
- Already sensitised individuals should consult their physician regarding working with respiratory irritants or sensitisers.
- Do not eat, drink or smoke when using this product.
- Take care to prevent spills, waste and minimize release to the environment.

Avoidance of contact:
- Oxidizing agents
- Acids

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.

Storage

Conditions for safe storage:
- 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.

Materials to avoid:
- Do not store with the following product types:
  - Strong oxidizing agents

Packaging material: Unsuitable material: None known.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Threshold limit value and permissible exposure limits for each component in the work environment

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Reference concentration / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfadiazine</td>
<td>68-35-9</td>
<td>TWA</td>
<td>2 mg/m³ (OEB 1)</td>
<td>Internal</td>
</tr>
<tr>
<td>Trimethoprim</td>
<td>738-70-5</td>
<td>TWA</td>
<td>400 µg/m³ (OEB)</td>
<td>Internal</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. 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.

9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state: suspension
- Colour: light yellow
- Odour: No data available
- Odour Threshold: No data available
- Melting point/freezing point: No data available
- Boiling point, initial boiling point and boiling range: No data available
- Flammability (solid, gas): Not applicable
- Flammability (liquids): No data available
- Lower explosion limit and upper explosion limit / flammability limit: Upper explosion limit / Upper: No data available
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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
Acids
Hazardous decomposition products : No hazardous decomposition products are known.
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 estimate: > 2,000 mg/kg
  Method: Calculation method

Components:

Sulfadiazine:
- Acute oral toxicity: LD50 (Mouse): 1,500 mg/kg
- Acute dermal toxicity: LD50 (Rat): > 5,000 mg/kg
  Remarks: Based on data from similar materials
- Acute toxicity (other routes of administration):
  LD50 (Rat): 880 mg/kg
  Application Route: Intravenous
  LD50 (Mouse): 180 mg/kg
  Application Route: Intravenous

Trimethoprim:
- Acute oral toxicity: LD50 (Rat): 1,500 - 5,300 mg/kg
  LD50 (Mouse): 1,910 - 7,000 mg/kg
- Acute toxicity (other routes of administration):
  LD50 (Rat): 400 - 500 mg/kg
  Application Route: Intraperitoneal
  LD50 (Dog): 90 mg/kg
  Application Route: Intravenous
  LD50 (Mouse): 132 mg/kg
  Application Route: Intravenous

Sodium hydroxide:
- Acute inhalation toxicity: Assessment: Corrosive to the respiratory tract.

2,2'-Iminodiethanol:
- Acute oral toxicity: LD50 (Rat): 1,600 mg/kg
- Acute inhalation toxicity:
  LC50 (Rat): > 3.35 mg/l
  Exposure time: 4 h
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Test atmosphere: dust/mist

Skin corrosion/irritation
Causes severe burns.

Components:

Sulfadiazine:
- Result: Skin irritation
- Remarks: Based on data from similar materials

Sodium hydroxide:
- Result: Corrosive after 3 minutes or less of exposure

2,2'-Iminodiethanol:
- Species: Rabbit
- Result: Skin irritation

Serious eye damage/eye irritation
Causes serious eye damage.

Components:

Sulfadiazine:
- Species: Rabbit
- Result: Irritation to eyes, reversing within 7 days
- Remarks: Based on data from similar materials

Sodium hydroxide:
- Result: Irreversible effects on the eye
- Remarks: Based on skin corrosivity.

2,2'-Iminodiethanol:
- Species: Rabbit
- Result: Irreversible effects on the eye

Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Components:

Sulfadiazine:
- Test Type: Maximisation Test
- Species: Guinea pig
- Result: Not a skin sensitizer.
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Remarks

Trimethoprim:
Test Type
: Maximisation Test
Exposure routes
: Dermal
Species
: Guinea pig
Result
: Not a skin sensitizer.

Sodium hydroxide:
Test Type
: Human repeat insult patch test (HRIPT)
Exposure routes
: Skin contact
Result
: negative

2,2’-Iminodiethanol:
Test Type
: Maximisation Test
Exposure routes
: Skin contact
Species
: Guinea pig
Method
: OECD Test Guideline 406
Result
: negative

Germ cell mutagenicity
Not classified based on available information.

Components:

Sulfadiazine:
Genotoxicity in vitro
: Test Type: Bacterial reverse mutation assay (AMES)
Result: negative
Remarks: Based on data from similar materials

Genotoxicity in vivo
: Test Type: Chromosomal aberration
Test system: Chinese hamster ovary cells
Result: negative
Remarks: Based on data from similar materials

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

Test Type: Chromosomal aberration
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Test Type: DNA damage and repair, unscheduled DNA synthesis in mammalian cells (in vitro)
Result: negative

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

Test Type: Chromosomal aberration
Species: Humans
Result: negative

2,2'-Iminodiethanol:

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

Test Type: Chromosome aberration test in vitro
Result: negative

Test Type: In vitro sister chromatid exchange assay in mammalian cells
Result: negative

Test Type: In vitro mammalian cell gene mutation test
Result: negative

Genotoxicity in vivo:
Test Type: Mammalian erythrocyte micronucleus test (in vivo cytogenetic assay)
Species: Mouse
Application Route: Skin contact
Result: negative

Carcinogenicity
Not classified based on available information.

Components:

2,2'-Iminodiethanol:

| Species   | Mouse |
| Application Route | Skin contact |
| Exposure time    | 103 weeks |
| Result           | positive   |
| Remarks          | The mechanism or mode of action may not be relevant in humans. |

Species: Rat
Application Route: Skin contact
Exposure time: 103 weeks
Result: negative

Reproductive toxicity
Suspected of damaging the unborn child.

Components:

Sulfadiazine:

<p>| Effects on foetal development | Test Type: Development |</p>
<table>
<thead>
<tr>
<th>Sulfadiazine (40%) / Trimethoprim (8%) Liquid Formulation</th>
</tr>
</thead>
</table>

<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>11.0</td>
<td>2021/08/27</td>
<td>508646-00018</td>
<td>2021/03/03</td>
<td>2016/02/10</td>
</tr>
</tbody>
</table>

Trimethoprim:

**Species:** Mouse  
**Application Route:** Oral  
**General Toxicity Maternal:** NOAEL: 1,000 mg/kg body weight  
**Result:** Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses

**Trimethoprim:**

**Species:** Mouse  
**Application Route:** Oral  
**General Toxicity Maternal:** NOAEL: 1,000 mg/kg body weight  
**Result:** Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses

**Trimethoprim:**

**Effects on fertility**  
**Test Type:** Fertility  
**Species:** Rat  
**Application Route:** Oral  
**Fertility:** NOAEL: 70 mg/kg body weight  
**Result:** No effects on fertility

**Effects on foetal development**  
**Test Type:** Development  
**Species:** Rat  
**Application Route:** Oral  
**Developmental Toxicity:** LOAEL: 70 mg/kg body weight  
**Result:** Effects on newborn  
**Remarks:** Maternal toxicity observed.

**Effects on foetal development**  
**Test Type:** Development  
**Species:** Rat  
**Application Route:** Oral  
**Developmental Toxicity:** LOAEL: 70 mg/kg body weight  
**Result:** Embryotoxic effects.  
**Remarks:** Maternal toxicity observed.

**Effects on foetal development**  
**Test Type:** Development  
**Species:** Rat  
**Application Route:** Oral  
**Developmental Toxicity:** LOAEL: 15 mg/kg body weight  
**Result:** Embryotoxic effects.  
**Remarks:** Maternal toxicity observed.

**Effects on foetal development**  
**Test Type:** Development  
**Species:** Hamster  
**Application Route:** Oral  
**Developmental Toxicity:** LOAEL: 1.7 mg/kg body weight  
**Result:** Embryotoxic effects., Teratogenic effects

**Effects on foetal development**  
**Test Type:** Development  
**Species:** Rabbit  
**Application Route:** Oral  
**Developmental Toxicity:** LOAEL: 100 mg/kg body weight  
**Result:** Embryotoxic effects., No teratogenic effects

**Reproductive toxicity - Assessment**  
**Suspected of damaging the unborn child.**

**2,2'-Iminodiethanol:**

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

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Embryo-foetal development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Species</td>
<td>Rat</td>
</tr>
<tr>
<td>Application Route</td>
<td>Inhalation</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 414</td>
</tr>
<tr>
<td>Result</td>
<td>negative</td>
</tr>
</tbody>
</table>

**STOT - single exposure**
May cause respiratory irritation.

**Components:**

**Sulfadiazine:**

| Assessment | May cause respiratory irritation. |

**STOT - repeated exposure**
May cause damage to organs (Bone marrow) through prolonged or repeated exposure.

**Components:**

**Trimethoprim:**

<table>
<thead>
<tr>
<th>Target Organs</th>
<th>Bone marrow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>Causes damage to organs through prolonged or repeated exposure.</td>
</tr>
</tbody>
</table>

**2,2’-Iminodietanol:**

<table>
<thead>
<tr>
<th>Exposure routes</th>
<th>Inhalation (dust/mist/fume)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment</td>
<td>No significant health effects observed in animals at concentrations of 0.2 mg/l/6h/d or less.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure routes</th>
<th>Ingestion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Organs</td>
<td>Kidney, Blood, Liver</td>
</tr>
<tr>
<td>Assessment</td>
<td>Shown to produce significant health effects in animals at concentrations of &gt;10 to 100 mg/kg bw.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Exposure routes</th>
<th>Skin contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Organs</td>
<td>Blood, Liver</td>
</tr>
<tr>
<td>Assessment</td>
<td>Shown to produce significant health effects in animals at concentrations of &gt;20 to 200 mg/kg bw.</td>
</tr>
</tbody>
</table>

**Repeated dose toxicity**

**Components:**

**Trimethoprim:**

<table>
<thead>
<tr>
<th>Species</th>
<th>Rat</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOAEL</td>
<td>100 mg/kg</td>
</tr>
<tr>
<td>LOAEL</td>
<td>300 mg/kg</td>
</tr>
<tr>
<td>Application Route</td>
<td>Oral</td>
</tr>
<tr>
<td>Exposure time</td>
<td>6 Months</td>
</tr>
<tr>
<td>Target Organs</td>
<td>Bone marrow, Liver, Pituitary gland, Thyroid</td>
</tr>
</tbody>
</table>
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Species: Rat
LOAEL: 300 mg/kg
Application Route: Oral
Exposure time: 3 Months
Target Organs: Bone marrow

Species: Dog
NOAEL: 2.5 mg/kg
LOAEL: 45 mg/kg
Application Route: Oral
Exposure time: 3 Months
Target Organs: Blood, Thyroid

2,2'-Iminodiethanol:
Species: Rat
LOAEL: 14 - 25 mg/kg
Application Route: Ingestion
Exposure time: 13 Weeks

Species: Rat
LOAEL: 0.015 mg/l
Application Route: inhalation (dust/mist/fume)
Exposure time: 90 Days
Method: OECD Test Guideline 413

Species: Rat
LOAEL: 32 mg/kg
Application Route: Skin contact
Exposure time: 13 Weeks

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:

Sulfadiazine:
General Information: May cause eye, skin, and respiratory tract irritation.

Trimethoprim:
Ingestion: Target Organs: Bone marrow
Symptoms: Abdominal pain, Nausea, Vomiting, skin rash, Dizziness, Headache, mental depression, confusion
12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Sulfadiazine:

<table>
<thead>
<tr>
<th>Toxicity to fish</th>
<th>LC50 (Pimephales promelas (fathead minnow)): &gt; 100 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>96 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 203</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toxicity to daphnia and other aquatic invertebrates</th>
<th>EC50 (Daphnia magna (Water flea)): &gt; 100 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>48 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 202</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toxicity to algae/aquatic plants</th>
<th>EC50 (Anabaena flos-aquae): 17 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>72 h</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 201</td>
</tr>
</tbody>
</table>

| NOEC (Anabaena flos-aquae)       | 3.9 mg/l                             |
| Exposure time                   | 72 h                                |
| Method                          | OECD Test Guideline 201              |

<table>
<thead>
<tr>
<th>EC50 (Pseudokirchneriella subcapitata (green algae)): &gt; 1 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
</tr>
<tr>
<td>Method</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOEC (Pseudokirchneriella subcapitata (green algae)): 0.13 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
</tr>
<tr>
<td>Method</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EC50 (Microcystis aeruginosa (blue-green algae)): 0.135 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
</tr>
<tr>
<td>Method</td>
</tr>
</tbody>
</table>

M-Factor (Acute aquatic toxicity):

<table>
<thead>
<tr>
<th>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</th>
<th>NOEC (Daphnia magna (Water flea)): 6.2 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
<td>21 d</td>
</tr>
<tr>
<td>Method</td>
<td>OECD Test Guideline 211</td>
</tr>
</tbody>
</table>

M-Factor (Chronic aquatic toxicity): 1

Toxicity to microorganisms:

<table>
<thead>
<tr>
<th>EC50: &gt; 1,000 mg/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exposure time</td>
</tr>
<tr>
<td>Test Type</td>
</tr>
<tr>
<td>Method</td>
</tr>
</tbody>
</table>

NOEC: 1,000 mg/l
Exposure time: 3 h
Test Type: Respiration inhibition
<table>
<thead>
<tr>
<th></th>
<th>Method: OECD Test Guideline 209</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trimethoprim:</strong></td>
<td></td>
</tr>
<tr>
<td>Toxicity to fish</td>
<td>LC50 (Pimephales promelas (fathead minnow)): 100 mg/l Exposure time: 96 h</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>EC50 (Daphnia magna Straus): 92 mg/l Exposure time: 48 h</td>
</tr>
<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>EC50 (Pseudokirchneriella subcapitata (microalgae)): 80.3 mg/l Exposure time: 72 h</td>
</tr>
<tr>
<td></td>
<td>NOEC (Pseudokirchneriella subcapitata (green algae)): 16 mg/l Exposure time: 72 h</td>
</tr>
<tr>
<td></td>
<td>EC50 (Anabaena flos-aquae): 253 mg/l Exposure time: 72 h</td>
</tr>
<tr>
<td></td>
<td>EC10 (Anabaena flos-aquae): 26 mg/l Exposure time: 72 h</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</td>
<td>NOEC (Zebrafish): 0.157 mg/l Exposure time: 21 d</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</td>
<td>NOEC (Daphnia magna (Water flea)): 6 mg/l Exposure time: 21 d</td>
</tr>
<tr>
<td><strong>2,2’-Iminodiethanol:</strong></td>
<td></td>
</tr>
<tr>
<td>Toxicity to fish</td>
<td>LC50 (Oncorhynchus mykiss (rainbow trout)): 460 mg/l Exposure time: 96 h</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates</td>
<td>EC50 (Ceriodaphnia dubia (water flea)): 30.1 mg/l Exposure time: 48 h</td>
</tr>
<tr>
<td>Toxicity to algae/aquatic plants</td>
<td>ErC50 (Pseudokirchneriella subcapitata (green algae)): 9.5 mg/l Exposure time: 72 h</td>
</tr>
<tr>
<td></td>
<td>EC10 (Pseudokirchneriella subcapitata (green algae)): 1.4 mg/l Exposure time: 72 h</td>
</tr>
<tr>
<td>Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)</td>
<td>EC10 (Daphnia magna (Water flea)): 1.05 mg/l Exposure time: 21 d</td>
</tr>
<tr>
<td>Toxicity to microorganisms</td>
<td>EC10: &gt; 1,000 mg/l Exposure time: 30 min Method: OECD Test Guideline 209</td>
</tr>
</tbody>
</table>
Persistence and degradability

**Components:**

**Sulfadiazine:**
- Biodegradability: Result: Not readily biodegradable.
  - Biodegradation: 0%
  - Exposure time: 28 d
  - Method: OECD Test Guideline 314

**2,2’-Iminodiethanol:**
- Biodegradability: Result: Readily biodegradable.
  - Biodegradation: 93%
  - Exposure time: 28 d
  - Method: OECD Test Guideline 301F

Bioaccumulative potential

**Components:**

**Sulfadiazine:**
- Partition coefficient: n-octanol/water: log Pow: 0.12

**Trimethoprim:**
- Partition coefficient: n-octanol/water: log Pow: 0.91

**2,2’-Iminodiethanol:**
- Partition coefficient: n-octanol/water: log Pow: -2.46

Mobility in soil
No data available

Hazardous to the ozone layer
Not applicable

Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

**Disposal methods**
- Waste from residues: 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.

14. TRANSPORT INFORMATION

International Regulations
SAFETY DATA SHEET

Sulfadiazine (40%) / Trimethoprim (8%) Liquid Formulation

Version 11.0 Revision Date: 2021/08/27
SDS Number: 508646-00018 Date of last issue: 2021/03/03
Date of first issue: 2016/02/10

UNRTDG
UN number : UN 1760
Proper shipping name : CORROSIVE LIQUID, N.O.S.
(Sodium hydroxide)
Class : 8
Packing group : I
Labels : 8

IATA-DGR
UN/ID No. : UN 1760
Proper shipping name : Corrosive liquid, n.o.s.
(Sodium hydroxide)
Class : 8
Packing group : I
Labels : Corrosive
Packing instruction (cargo aircraft) : 854
Packing instruction (passenger aircraft) : 850

IMDG-Code
UN number : UN 1760
Proper shipping name : CORROSIVE LIQUID, N.O.S.
(Sodium hydroxide, Sulfadiazine)
Class : 8
Packing group : I
Labels : 8
EmS Code : F-A, S-B
Marine pollutant : yes

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

National Regulations
Refer to section 15 for specific national regulation.

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.

15. REGULATORY INFORMATION

Related Regulations

Fire Service Law
Not applicable to dangerous materials / designated flammables.

Chemical Substance Control Law
Priority Assessment Chemical Substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diethanolamine</td>
<td>91</td>
</tr>
</tbody>
</table>

18 / 21
Industrial Safety and Health Law

Harmful Substances Prohibited from Manufacture
Not applicable

Harmful Substances Required Permission for Manufacture
Not applicable

Substances Prevented From Impairment of Health
Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 2: Information on Existing Chemicals having Mutagenicity
Not applicable

Circular concerning Information on Chemicals having Mutagenicity - Annex 1: Information on Notified Substances having Mutagenicity
Not applicable

Substances Subject to be Notified Names
Article 57-2 (Enforcement Order Table 9)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Number</th>
<th>Concentration (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>319</td>
<td>&gt;=1 - &lt;10</td>
</tr>
<tr>
<td>Diethanolamine</td>
<td>219</td>
<td>&gt;=0.1 - &lt;1</td>
</tr>
</tbody>
</table>

Substances Subject to be Indicated Names
Article 57 (Enforcement Order Article 18)

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium hydroxide</td>
<td>319</td>
</tr>
</tbody>
</table>

Ordinance on Prevention of Hazards Due to Specified Chemical Substances
Not applicable

Ordinance on Prevention of Lead Poisoning
Not applicable

Ordinance on Prevention of Tetraalkyl Lead Poisoning
Not applicable

Ordinance on Prevention of Organic Solvent Poisoning
Not applicable

Enforcement Order of the Industrial Safety and Health Law - Attached table 1 (Dangerous Substances)
Not applicable

Poisonous and Deleterious Substances Control Law

Deleterious substance

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Cabinet Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparations containing sodium hydroxide</td>
<td>68</td>
</tr>
</tbody>
</table>

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof
Not applicable
SAFETY DATA SHEET

Sulfadiazine (40%) / Trimethoprim (8%) Liquid Formulation

High Pressure Gas Safety Act
Not applicable

Explosive Control Law
Not applicable

Vessel Safety Law
Corrosive substances (Article 2 and 3 of rules on shipping and storage of dangerous goods and its Attached Table 1)

Aviation Law
Corrosive substances (Article 194 of The Enforcement Rules of Aviation Law and its Attached Table 1)

Marine Pollution and Sea Disaster Prevention etc Law

| Bulk transportation | : | Noxious liquid substance(Category Z) |

Marine Pollution and Sea Disaster Prevention etc Law
Pack transportation : Classified as marine pollutant

Narcotics and Psychotropics Control Act
Narcotic or Psychotropic Raw Material (Export / Import Permission)
Not applicable
Specific Narcotic or Psychotropic Raw Material (Export / Import permission)
Not applicable

Waste Disposal and Public Cleansing Law
Industrial waste

The components of this product are reported in the following inventories:
- AICS : not determined
- DSL : not determined
- IECSC : not determined

16. OTHER INFORMATION

Further information

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

Date format : yyyy/mm/dd

Full text of other abbreviations
- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
SAFETY DATA SHEET

Sulfadiazine (40%) / Trimethoprim (8%) Liquid Formulation

Version 11.0  Revision Date: 2021/08/27  SDS Number: 508646-00018  Date of last issue: 2021/03/03  Date of first issue: 2016/02/10

ACGIH / TWA : 8-hour, time-weighted average
ACGIH / C : Ceiling limit
JP OEL JSOH / OEL-C : Occupational Exposure Limit-Ceiling

AIC - 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; HIRA - 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

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.

JP / EN