SAFETY DATA SHEET

Netobimin Formulation

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Netobimin Formulation

Manufacturer or supplier's details
Company : MSD
Address : JL Raya Pandaan KM. 48
Pandaan, Jawa Timur - Indonesia
Telephone : 908-740-4000
Emergency telephone number : 1-908-423-6000
E-mail address : EHSDATASTEWARD@msd.com

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

2. HAZARDS IDENTIFICATION

GHS Classification
Acute toxicity (Inhalation) : Category 4
Serious eye damage/eye irritation : Category 2B
Reproductive toxicity : Category 2
Specific target organ toxicity - repeated exposure (Oral) : Category 1 (Testis, Liver, Skin, Gastrointestinal tract)

GHS label elements
Hazard pictograms : ![Danger](image)
Signal word : Danger
Hazard statements : H320 Causes eye irritation.  
H332 Harmful if inhaled.  
H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.  
H372 Causes damage to organs (Testis, Liver, Skin, Gastrointestinal tract) through prolonged or repeated exposure if swallowed.

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.
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/ face protection.

Response:
P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.

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

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netobimin</td>
<td>88255-01-0</td>
<td>&gt;= 10 &lt; 30</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.

In case of skin contact : In case of contact, immediately flush skin with plenty of water.
Remove contaminated clothing and shoes.
Get medical attention.
Wash clothing before reuse.
Thoroughly clean shoes before reuse.
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
- Nitrogen oxides (NOx)
- Sulphur compounds

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

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.
- 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 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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components 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>Netobimin</td>
<td>88255-01-0 TWA</td>
<td>20 ug/m3 (OEB 3) Internal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Wipe limit</td>
<td>200 ug/100 cm3 Internal</td>
<td></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**: 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**: 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.
- 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.

### 9. PHYSICAL AND CHEMICAL PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>suspension</td>
</tr>
<tr>
<td>Colour</td>
<td>yellow</td>
</tr>
<tr>
<td>Odour</td>
<td>No data available</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>4.5 - 6.5</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>No data available</td>
</tr>
</tbody>
</table>
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.
11. TOXICOLOGICAL INFORMATION

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

Acute toxicity
Harmful if inhaled.

Product:
Acute inhalation toxicity: Acute toxicity estimate: 1.27 mg/l
- Exposure time: 4 h
- Test atmosphere: dust/mist
- Method: Calculation method

Components:
Netobimin:
Acute oral toxicity: LD50 (Rat): > 2,000 mg/kg
Acute inhalation toxicity: LClO (Rat): 0.19 mg/l
- Test atmosphere: dust/mist

Skin corrosion/irritation
Not classified based on available information.

Components:
Netobimin:
Species: Rabbit
Method: Draize Test
Result: Mild skin irritation

Serious eye damage/eye irritation
Causes eye irritation.

Components:
Netobimin:
Species: Rabbit
Result: Mild eye irritation
Method: Draize Test

Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.
Respiratory sensitisation
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Components:

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

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

Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative

Genotoxicity in vivo: Test Type: Micronucleus test
Species: Mouse
Cell type: Bone marrow
Result: positive

Carcinogenicity
Not classified based on available information.

Components:

Netobimin:
Species: Rat
Application Route: Oral
Exposure time: 1 Years
Remarks: No significant adverse effects were reported

Reproductive toxicity
Suspected of damaging fertility. Suspected of damaging the unborn child.

Components:

Netobimin:
Effects on fertility: Test Type: Two-generation study
Species: Rat
Application Route: Oral
General Toxicity F1: NOAEL: 15 mg/kg body weight
Result: Maternal effects

Effects on foetal development: Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: NOAEL: 91 mg/kg body weight

Test Type: Development
Species: Rat
Application Route: Oral
Developmental Toxicity: LOAEL: 228 mg/kg body weight
Result: Teratogenic effects, Maternal toxicity observed., Feto-toxicity

Test Type: Development
Application Route: Oral
Developmental Toxicity: NOAEL: 22 mg/kg body weight

Test Type: Development
Species: Rabbit
Application Route: Oral
Developmental Toxicity: LOAEL: 60 mg/kg body weight
Target Organs: Testes
Result: Fetotoxicity

Test Type: Development
Species: Rabbit
Application Route: Oral
Developmental Toxicity: LOAEL: 25 mg/kg body weight
Result: Fetotoxicity, Maternal toxicity observed., Teratogenic effects

Test Type: Development
Species: Rabbit
Application Route: Oral
Developmental Toxicity: NOAEL: 5 mg/kg body weight
Result: Teratogenicity and developmental toxicity

Reproductive toxicity - Assessment: Suspected of damaging fertility. Suspected of damaging the unborn child.

**STOT - single exposure**
Not classified based on available information.

**STOT - repeated exposure**
Causes damage to organs (Testis, Liver, Skin, Gastrointestinal tract) through prolonged or repeated exposure if swallowed.

**Components:**

**Netobimin:**

- **Exposure routes**: Oral
- **Target Organs**: Testis, Liver, Skin, Gastrointestinal tract
- **Assessment**: Shown to produce significant health effects in animals at concentrations of 10 mg/kg bw or less.
Repeated dose toxicity

Components:
Netobimin:
- **Species**: Rat
- **NOAEL**: 60 mg/kg
- **Application Route**: Oral
- **Exposure time**: 1 yr
- **Target Organs**: Testis
- **Symptoms**: male reproductive effects

- **Species**: Rat
- **LOAEL**: 15 mg/kg
- **Application Route**: Oral
- **Exposure time**: 1 yr
- **Target Organs**: Liver
- **Symptoms**: Irregularities

- **Species**: Rat
- **NOAEL**: 7 mg/kg
- **Application Route**: Oral
- **Exposure time**: 1 yr
- **Target Organs**: Skin
- **Symptoms**: Irregularities
- **Remarks**: Based on data from similar materials

- **Species**: Rat
- **LOAEL**: 38 mg/kg
- **Application Route**: Oral
- **Exposure time**: 90 d
- **Target Organs**: Skin, Testis
- **Symptoms**: Irregularities, male reproductive effects

- **Species**: Dog
- **Application Route**: Oral
- **Exposure time**: 90 d
- **Target Organs**: Gastrointestinal tract
- **Symptoms**: Diarrhoea, Vomiting

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:
Netobimin:
- **Ingestion**: Symptoms: The most common side effects are; Dizziness, Headache, Abdominal pain, Gastrointestinal discomfort, Vomiting
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Version 2.1  Revision Date: 2020/10/10  SDS Number: 5840432-00003  Date of last issue: 2020/05/12

12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

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

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.

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Minister of Industry Regulation No. 23/M-IND/PER/4/2013 concerning the Revision of Minister of Industry Regulation No. 87/M-IND/PER/9/2009 concerning Globally Harmonized System of Classification and Labelling of Chemicals.

Regulation of the Minister of Health No. 472 of 1996 on the Safeguarding of Substances Hazardous to Health
Hazardous substances that must be registered: Not applicable
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Government Regulation No. 74 of 2001 on the Management of Hazardous and Toxic Substances

Hazardous substances approved for use: Not applicable
Prohibited substances: Not applicable
Restricted substances: Not applicable

Regulation of the Minister of Trade No. 44 of 2009 on Procurement, Distribution and Supervision of Hazardous Materials

Type of Hazardous Materials Restricted to Import, Distribution and Supervision: Not applicable

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

Date format: yyyy/mm/dd

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; KECl - 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; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; PBT - Persistent, Bioaccumulative, and Toxic; SACHS - Safe Chemicals Action Coalition; Sch - Swedish Norm; SIDS - Significant Information Deficiency; TDI - Threshold Limit Value - Time Weighted Average; TH - Threshold Limit Value - Ceiling; TWA - Time Weighted Average; UDS - United Nations Recommendations on the Transport of Dangerous Goods: Model Regulations; UN3337 - United Nations Number; USCG - United States Coast Guard; USMPC - United States Maximum Permissible Concentration; USNRC - United States Nuclear Regulatory Commission; WGD - Workers' Guide to Dangerous Goods; WHO - World Health Organization; WHO EP - World Health Organization, Environmental Programme; WHO HI - World Health Organization, Health Organization; WHO RR - World Health Organization, Research Programme; WHO TD - World Health Organization, Toxicology Department; WHO TR - World Health Organization, Toxicology Research; WHO TP - World Health Organization, Toxicology Programme; WHO TT - World Health Organization, Technical Report Series; XN - Tolerable Daily Intake; XN - Tolerable Weekly Intake; XN - Tolerable Lifetime Intake; XN - Tolerable Daily Intake
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.

ID / EN