# SAFETY DATA SHEET

## Doxycycline 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>1.1</td>
<td>09.04.2021</td>
<td>6105686-00002</td>
<td>06.07.2020</td>
<td>06.07.2020</td>
</tr>
</tbody>
</table>

## SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name**: Doxycycline Formulation  
**Manufacturer or supplier’s details**  
**Company**: MSD  
**Address**: Talcahuano 750, 6th floor, Ciudad Autonoma Buenos Aires, Argentina C1013AAP  
**Telephone**: 908-740-4000  
**Emergency telephone**: 1-908-423-6000  
**E-mail address**: EHSDATASTEWARD@msd.com  
**Recommended use of the chemical and restrictions on use**  
**Recommended use**: Veterinary product

## SECTION 2. HAZARDS IDENTIFICATION

<table>
<thead>
<tr>
<th>GHS Classification</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity (Oral)</td>
<td>Category 5</td>
</tr>
<tr>
<td>Skin corrosion</td>
<td>Category 1</td>
</tr>
<tr>
<td>Serious eye damage</td>
<td>Category 1</td>
</tr>
<tr>
<td>Short-term (acute) aquatic hazard</td>
<td>Category 1</td>
</tr>
<tr>
<td>Long-term (chronic) aquatic hazard</td>
<td>Category 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GHS label elements</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard pictograms</td>
<td><img src="image" alt="Hazard Pictograms" /></td>
</tr>
</tbody>
</table>

**Signal Word**: Danger  
**Hazard Statements**:  
H303 May be harmful if swallowed.  
H314 Causes severe skin burns and eye damage.  
H400 Very toxic to aquatic life.  
H411 Toxic to aquatic life with long lasting effects.  
**Precautionary Statements**:  
**Prevention**:  
P260 Do not breathe dust.  
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.  
P280 Wear eye protection/ face 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.  
P312 Call a POISON CENTER/ doctor if you feel unwell.  
P363 Wash contaminated clothing before reuse.  
P391 Collect spillage.  

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

Other hazards which do not result in classification  
May form explosive dust-air mixture during processing, handling or other means.  

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS  

<table>
<thead>
<tr>
<th>Substance / Mixture</th>
<th>Components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture</td>
<td>Mixture</td>
<td>Doxycycline Hyclate</td>
<td>24390-14-5</td>
<td>&gt;= 50 -&lt; 70</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.  
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 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:
- May be harmful if swallowed.
- Causes serious eye damage.
- Causes severe burns.
- Causes digestive tract burns.

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:
- Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
- Exposure to combustion products may be a hazard to health.

Hazardous combustion products:
- Carbon 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 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.
- Retain and dispose of contaminated wash water.
- Local authorities should be advised if significant spillages cannot be contained.

Methods and materials for:
- Sweep up or vacuum up spillage and collect in suitable
containment and cleaning up

container for disposal.
Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration.
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 : Static electricity may accumulate and ignite suspended dust causing an explosion.
Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres.

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 dust.
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.
Minimize dust generation and accumulation.
Keep container closed when not in use.
Keep away from heat and sources of ignition.
Take precautionary measures against static discharges.
Take care to prevent spills, waste and minimize release to the environment.

Conditions for safe storage : Keep in properly labeled containers.
Store locked up.
Keep tightly closed.
Store in accordance with the particular national regulations.

Materials to avoid : Do not store with the following product types:
Strong oxidizing agents
Organic peroxides
Explosives

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>Doxycycline Hyclate</td>
<td>24390-14-5</td>
<td>TWA</td>
<td>OEL = 100</td>
<td>Internal</td>
</tr>
</tbody>
</table>
Engineering measures: Use feasible engineering controls to minimize exposure to compound. All engineering controls should be implemented by facility design and operated in accordance with GMP principles to protect products, workers, and the environment.

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: powder

Color: light yellow

Odor: No data available

Odor Threshold: No data available

pH: 1,5 - 3,5

Melting point/freezing point: No data available

Initial boiling point and boiling range: No data available

Flash point: Not applicable

Evaporation rate: Not applicable
Flammability (solid, gas) : May form explosive dust-air mixture during processing, handling or other means.

Flammability (liquids) : Not applicable

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapor pressure : Not applicable

Relative vapor density : Not applicable

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 : Not applicable

Explosive properties : Not explosive

Oxidizing properties : The substance or mixture is not classified as oxidizing.

Molecular weight : No data available

Particle size : No data available

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : Not classified as a reactivity hazard.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : May form explosive dust-air mixture during processing, handling or other means. Can react with strong oxidizing agents.

Conditions to avoid : Heat, flames and sparks. Avoid dust formation.

Incompatible materials : Oxidizing agents

Hazardous decomposition products : No hazardous decomposition products are known.
SAFETY DATA SHEET

Doxycycline Formulation

SECTION 11. TOXICOLOGICAL INFORMATION

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

Acute toxicity
May be harmful if swallowed.

Product:
Acute oral toxicity: Acute toxicity estimate: 4.000 mg/kg
Method: Calculation method

Components:
Doxycycline Hyclate:
Acute oral toxicity: LD50 (Rat): 2.000 mg/kg
LD50 (Mouse): 1.870 mg/kg
LD50 (Dog): 500 mg/kg
Acute toxicity (other routes of administration): LD50 (Rat): 222 mg/kg
Application Route: Intravenous

Skin corrosion/irritation
Causes severe burns.

Components:
Doxycycline Hyclate:
Remarks: No data available
May irritate skin.

Serious eye damage/eye irritation
Causes serious eye damage.

Components:
Doxycycline Hyclate:
Remarks: No data available
May irritate eyes.

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.
Components:

**Doxycycline Hyclate:**

**Remarks:**

- No data available
- May cause sensitization by skin contact.
- May cause sensitization of susceptible persons by skin contact or by inhalation of dust.

Germ cell mutagenicity

Not classified based on available information.

Components:

**Doxycycline Hyclate:**

**Genotoxicity in vitro:**

- **Test Type:** Chromosome aberration test in vitro
- **Test system:** Chinese hamster cells
- **Result:** Weakly positive
- **Remarks:** Based on data from similar materials

- **Test Type:** In vitro mammalian cell gene mutation test
- **Test system:** Chinese hamster cells
- **Result:** negative
- **Remarks:** Based on data from similar materials

**Genotoxicity in vivo:**

- **Test Type:** In vivo micronucleus test
- **Species:** Mouse
- **Application Route:** Oral
- **Result:** negative
- **Remarks:** Based on data from similar materials

Carcinogenicity

Not classified based on available information.

Components:

**Doxycycline Hyclate:**

**Species:** Rat
**Application Route:** Oral
**Exposure time:** 2 Years: 200 mg/kg body weight
**Symptoms:** females
**Target Organs:** Uterus (including cervix)
**Remarks:** Benign tumor(s)

Reproductive toxicity

Not classified based on available information.

Components:

**Doxycycline Hyclate:**

**Effects on fetal development:**

- **Test Type:** Fertility/early embryonic development
- **Species:** Rat, females
- **Application Route:** Oral
**General Toxicity Maternal:** NOAEL: 250 mg/kg body weight
Result: No adverse effects.

Test Type: Fertility/early embryonic development
Species: Rat, male
Application Route: Oral
General Toxicity Maternal: NOAEL: 50 mg/kg body weight
Symptoms: male reproductive effects
Remarks: Fertility and developmental toxicity tests did not reveal any effect on reproduction.

STOT-single exposure
Not classified based on available information.

STOT-repeated exposure
Not classified based on available information.

Repeated dose toxicity

Components:

Doxycycline Hyclate:
Species: Rat
NOAEL: 25 mg/kg
Application Route: Oral
Exposure time: 28 d
Symptoms: Thyroid effects

Aspiration toxicity
Not classified based on available information.

Experience with human exposure

Components:

Doxycycline Hyclate:
General Information: May cause
Target Organs: Teeth
Symptoms: Gastrointestinal disturbance
Skin contact: Remarks: May cause photosensitization.

Further information

Components:

Doxycycline Hyclate:
Remarks: Well tolerated in clinical use

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Doxycycline Hyclate:
Toxicity to algae/aquatic plants: EC10 (Anabaena flos-aquae): 0,251 mg/l
End point: Growth rate
Exposure time: 72 h

Ecotoxicology Assessment
Acute aquatic toxicity: Very toxic to aquatic life.
Chronic aquatic toxicity: Toxic to aquatic life with long lasting effects.

Persistence and degradability
No data available

Bioaccumulative potential

Components:

Doxycycline Hyclate:
Partition coefficient: n-octanol/water: log Pow: 0,02

Mobility in soil
No data available

Other adverse effects
No data available

SECTION 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.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Doxycycline Hyclate)

Class: 9
Packing group: III
Labels: 9

IATA-DGR
UN/ID No.: UN 3077
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Doxycycline Hyclate)

Class: 9
Packing group: III
Labels: Miscellaneous
Packing instruction (cargo aircraft): 956
Packing instruction (passenger aircraft): 956
Environmentally hazardous: yes

IMDG-Code
UN number: UN 3077
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Doxycycline Hyclate)

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.

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

Safety, health and environmental regulations/legislation specific for the substance or mixture
Argentina. Carcinogenic Substances and Agents Registry: Not applicable

Control of precursors and essential chemicals for the preparation of drugs: Not applicable

International Regulations
The ingredients of this product are reported in the following inventories:
AICS: not determined
DSL: not determined
IECSC: not determined

SECTION 16. OTHER INFORMATION

Further information
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.

AR / Z8