

Orbifloxacin Liquid Formulation

Version 8.0 Revision Date: 2023/09/30 SDS Number: 785433-00018 Date of last issue: 2023/04/04
Date of first issue: 2016/06/28

1. PRODUCT AND COMPANY IDENTIFICATION

Chemical product name : Orbifloxacin 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

Restrictions on use : Not applicable

2. HAZARDS IDENTIFICATION

GHS classification of chemical product

Reproductive toxicity : Category 2

Specific target organ toxicity - repeated exposure (Oral) : Category 2 (Eye)

GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : H361d Suspected of damaging the unborn child.
H373 May cause damage to organs (Eye) 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.
P280 Wear protective gloves/ protective clothing/ eye protec-

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

tion/ face protection.

Response:

P308 + P313 IF exposed or concerned: 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

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)	ENCS No.
Propylene glycol	57-55-6	$\geq 10 - < 20$	2-234
Orbifloxacin	113617-63-3	$\geq 3 - < 10$	
Lactic acid	50-21-5	$\geq 1 - < 3$	2-1369
Sodium hydroxide	1310-73-2	$\geq 1 - < 2$	1-410

4. FIRST AID MEASURES

- General advice : In the case of accident or if you feel unwell, seek medical advice immediately.
When symptoms persist or in all cases of doubt seek medical advice.
- If inhaled : If inhaled, remove to fresh air.
Get medical attention.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
Remove 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.
Get medical attention.
Rinse mouth thoroughly with water.
- Most important symptoms : Suspected of damaging the unborn child.

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

and effects, both acute and delayed
 Protection of first-aiders : May cause damage to organs through prolonged or repeated exposure if swallowed.
 : 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.

5. FIREFIGHTING 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
 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.

Orbifloxacin Liquid Formulation

Version 8.0	Revision Date: 2023/09/30	SDS Number: 785433-00018	Date of last issue: 2023/04/04 Date of first issue: 2016/06/28
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Sections 13 and 15 of this SDS provide information regarding certain local or national requirements.

7. HANDLING AND STORAGE

Handling

- 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 breathe mist or vapours.
Do not swallow.
Avoid contact with eyes.
Avoid prolonged or repeated contact with skin.
Handle in accordance with good industrial hygiene and safety practice, based on the results of the workplace exposure assessment
Take care to prevent spills, waste and minimize release to the environment.
- Avoidance of contact : Oxidizing agents
- 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.
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

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Reference concentration / Permissible concentration	Basis
Orbifloxacin	113617-63-3	TWA	0.2 mg/m ³ (OEB 2)	Internal

Orbifloxacin Liquid Formulation

Version 8.0 Revision Date: 2023/09/30 SDS Number: 785433-00018 Date of last issue: 2023/04/04
 Date of first issue: 2016/06/28

Sodium hydroxide	1310-73-2	OEL-C	2 mg/m ³	JP OEL JSOH
		C	2 mg/m ³	ACGIH

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 : Combined particulates and organic vapour 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 brown

Odour : odourless

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 / Up- per flammability limit : No data available

Lower explosion limit / : No data available

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Lower flammability limit

Flash point	:	No data available
Decomposition temperature	:	No data available
pH	:	No data available
Evaporation rate	:	No data available
Auto-ignition temperature	:	No data available
Viscosity		
Viscosity, kinematic	:	No data available
Solubility(ies)		
Water solubility	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Vapour pressure	:	No data available
Density and / or relative density		
Relative density	:	No data available
Density	:	No data available
Relative vapour density	:	No data available
Explosive properties	:	Not explosive
Oxidizing properties	:	The substance or mixture is not classified as oxidizing.
Molecular weight	:	No data available
Particle characteristics		
Particle size	:	No data available

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.

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure :

- Inhalation
- Skin contact
- Ingestion
- Eye contact

Acute toxicity

Not classified based on available information.

Components:**Propylene glycol:**

Acute oral toxicity	:	LD50 (Rat): 22,000 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 44.9 mg/l Exposure time: 4 h Test atmosphere: dust/mist
Acute dermal toxicity	:	LD50 (Rabbit): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity

Orbifloxacin:

Acute oral toxicity	:	LD50 (Rat): > 3,000 mg/kg Remarks: No mortality observed at this dose. LD50 (Mouse): > 2,000 mg/kg Remarks: No mortality observed at this dose. LD50 (Dog): > 600 mg/kg Symptoms: Vomiting Remarks: No mortality observed at this dose.
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	Remarks: No data available
Acute toxicity (other routes of administration)	:	LD50 (Rat): > 200 mg/kg Application Route: Intramuscular LD50 (Mouse): 500 mg/kg Application Route: Intramuscular LD50 (Rat): 233 mg/kg Application Route: Intravenous LD50 (Mouse): 250 mg/kg Application Route: Intravenous

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Lactic acid:

Acute oral toxicity	: LD50 (Rat): > 2,000 mg/kg Remarks: Based on data from similar materials
Acute inhalation toxicity	: LC50 (Rat): > 5 mg/l Exposure time: 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Assessment: Corrosive to the respiratory tract. Remarks: Based on data from similar materials
Acute dermal toxicity	: LD50 (Rabbit): > 2,000 mg/kg Assessment: The substance or mixture has no acute dermal toxicity Remarks: Based on data from similar materials

Sodium hydroxide:

Acute inhalation toxicity	: Assessment: Corrosive to the respiratory tract.
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Skin corrosion/irritation

Not classified based on available information.

Product:

Species	: Rabbit
Result	: No skin irritation

Components:**Propylene glycol:**

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: No skin irritation

Orbifloxacin:

Species	: Rabbit
Method	: Draize Test
Result	: No skin irritation

Lactic acid:

Species	: Rabbit
Method	: OECD Test Guideline 404
Result	: Corrosive after 1 to 4 hours of exposure
Remarks	: Based on data from similar materials

Sodium hydroxide:

Result	: Corrosive after 3 minutes or less of exposure
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Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Result	:	Mild eye irritation

Components:**Propylene glycol:**

Species	:	Rabbit
Result	:	No eye irritation
Method	:	OECD Test Guideline 405

Orbifloxacin:

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

Lactic acid:

Species	:	Chicken eye
Remarks	:	Based on data from similar materials
Result	:	Irreversible effects on the eye

Sodium hydroxide:

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

Respiratory or skin sensitisation**Skin sensitisation**

Not classified based on available information.

Respiratory sensitisation

Not classified based on available information.

Product:

Test Type	:	Magnusson-Kligman-Test
Exposure routes	:	Dermal
Species	:	Guinea pig
Result	:	Not a skin sensitizer.

Components:**Propylene glycol:**

Test Type	:	Maximisation Test
Exposure routes	:	Skin contact
Species	:	Guinea pig

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Result : negative

Orbifloxacin:

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

Lactic acid:

Test Type : Buehler Test
 Exposure routes : Skin contact
 Species : Guinea pig
 Result : negative
 Remarks : Based on data from similar materials

Sodium hydroxide:

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

Germ cell mutagenicity

Not classified based on available information.

Components:**Propylene glycol:**

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Result: negative
 Test Type: Chromosome aberration test in vitro
 Method: OECD Test Guideline 473
 Result: negative
 Genotoxicity in vivo : Test Type: Mammalian erythrocyte micronucleus test (in vivo
 cytogenetic assay)
 Species: Mouse
 Application Route: Intraperitoneal injection
 Result: negative

Orbifloxacin:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Result: equivocal
 Test Type: Mouse Lymphoma
 Result: positive
 Test Type: Chromosomal aberration
 Test system: Human lymphocytes
 Result: positive

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Genotoxicity in vivo : Test Type: Micronucleus test
 Species: Mouse
 Cell type: Bone marrow
 Application Route: Intraperitoneal injection
 Result: negative

Test Type: unscheduled DNA synthesis assay
 Species: Rat
 Cell type: Liver cells
 Application Route: Oral
 Result: negative

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

Lactic acid:

Genotoxicity in vitro : Test Type: Bacterial reverse mutation assay (AMES)
 Method: OECD Test Guideline 471
 Result: negative
 Remarks: Based on data from similar materials

Test Type: In vitro mammalian cell gene mutation test
 Method: OECD Test Guideline 476
 Result: negative
 Remarks: Based on data from similar materials

Test Type: Chromosome aberration test in vitro
 Method: OECD Test Guideline 473
 Result: negative
 Remarks: Based on data from similar materials

Carcinogenicity

Not classified based on available information.

Components:**Propylene glycol:**

Species : Rat
 Application Route : Ingestion
 Exposure time : 2 Years
 Result : negative

Orbifloxacin:

Species : Rat
 Application Route : Oral
 Exposure time : 2 Years
 NOAEL : 200 mg/kg body weight
 Result : negative

Species : Mouse

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Application Route	: Oral
Exposure time	: 2 Years
NOAEL	: 200 mg/kg body weight
Result	: negative

Lactic acid:

Species	: Rat
Application Route	: Ingestion
Exposure time	: 2 Years
Result	: negative
Remarks	: Based on data from similar materials

Reproductive toxicity

Suspected of damaging the unborn child.

Components:**Propylene glycol:**

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

Orbifloxacin:

Effects on fertility	: Test Type: Two-generation reproduction toxicity study Species: Rat Application Route: Oral General Toxicity - Parent: NOAEL: 50 mg/kg body weight Early Embryonic Development: NOAEL: 50 mg/kg body weight Result: No adverse effects
Effects on foetal development	: Test Type: Embryo-foetal development Species: Rat Application Route: Oral Embryo-foetal toxicity: LOAEL: 333 mg/kg body weight Result: No teratogenic effects, Embryotoxic effects and adverse effects on the offspring were detected only at high maternally toxic doses
	: Test Type: Embryo-foetal development Species: Rabbit Application Route: Oral General Toxicity Maternal: NOAEL: 20 mg/kg body weight Embryo-foetal toxicity: NOAEL: 60 mg/kg body weight Result: No effects on early embryonic development, Embryo-

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

toxic effects and adverse effects on the offspring were detected only at high maternally toxic doses, Reduced maternal body weight gain

Test Type: Development
 Species: Dog
 Application Route: Oral
 Developmental Toxicity: LOAEL: 2.5 mg/kg body weight
 Result: Effects on postnatal development, Skeletal malformations

Reproductive toxicity - Assessment : Some evidence of adverse effects on development, based on animal experiments.

Lactic acid:

Effects on foetal development : Test Type: Embryo-foetal development
 Species: Mouse
 Application Route: Ingestion
 Result: negative

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

May cause damage to organs (Eye) through prolonged or repeated exposure if swallowed.

Product:

Target Organs : Eye
 Assessment : May cause damage to organs through prolonged or repeated exposure.

Repeated dose toxicity**Product:**

Species : Dog
 NOAEL : 22.5 mg/kg
 LOAEL : 37.5 mg/kg
 Application Route : Oral
 Exposure time : 30 Days
 Symptoms : Gastrointestinal disturbance

Species : Dog
 LOAEL : 75 mg/kg
 Application Route : Oral
 Exposure time : 10 Days
 Symptoms : Salivation, Gastrointestinal disturbance, Vomiting

Species : Cat
 LOAEL : 45 mg/kg
 Application Route : Oral
 Exposure time : 30 Days

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Target Organs : Eye
 Symptoms : Salivation, Lachrymation, Gastrointestinal disturbance, Liver disorders

Components:**Propylene glycol:**

Species : Rat, male
 NOAEL : >= 1,700 mg/kg
 Application Route : Ingestion
 Exposure time : 2 yr

Orbifloxacin:

Species : Rat
 NOAEL : 20 mg/kg
 LOAEL : 80 mg/kg
 Application Route : Oral
 Exposure time : 3 Months
 Target Organs : Testis, Liver, Kidney, spleen

Species : Mouse
 NOAEL : 80 mg/kg
 LOAEL : 250 mg/kg
 Application Route : Oral
 Exposure time : 3 Months

Species : Juvenile dog
 NOAEL : 50 mg/kg
 LOAEL : 250 mg/kg
 Application Route : Oral
 Exposure time : 14 Days
 Target Organs : Heart, Bone
 Symptoms : Gastrointestinal disturbance
 Remarks : mortality observed

Species : Juvenile dog
 NOAEL : 2 mg/kg
 LOAEL : 3 mg/kg
 Application Route : Oral
 Exposure time : 90 Days
 Target Organs : Bone
 Remarks : No significant adverse effects were reported

Species : Dog
 NOAEL : 37.5 mg/kg
 Application Route : Oral
 Exposure time : 30 Days

Species : Cat
 NOAEL : 7.5 mg/kg
 LOAEL : 22.5 mg/kg

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Application Route	:	Oral
Exposure time	:	1 Months
Symptoms	:	Gastrointestinal disturbance

Lactic acid:

Species	:	Rat
NOAEL	:	> 100 mg/kg
Application Route	:	Ingestion
Exposure time	:	13 Weeks
Remarks	:	Based on data from similar materials

Species	:	Rat
LOAEL	:	886 mg/kg
Application Route	:	Skin contact
Exposure time	:	13 Weeks

Aspiration toxicity

Not classified based on available information.

Experience with human exposure**Components:****Orbifloxacin:**

Ingestion	:	Symptoms: central nervous system effects, Gastrointestinal disturbance, liver function change, anaphylaxis, Rash Remarks: May cause photosensitisation.
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12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****Propylene glycol:**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 40,613 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Ceriodaphnia dubia (water flea)): 18,340 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	ErC50 (Skeletonema costatum (marine diatom)): 19,300 mg/l Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	NOEC (Ceriodaphnia dubia (water flea)): 13,020 mg/l Exposure time: 7 d
Toxicity to microorganisms	:	NOEC (Pseudomonas putida): > 20,000 mg/l Exposure time: 18 h

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

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Lactic acid:

Toxicity to fish	:	LC50 (Danio rerio (zebra fish)): > 100 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 Remarks: Based on data from similar materials
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): > 100 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 Remarks: Based on data from similar materials
Toxicity to algae/aquatic plants	:	ErC50 (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
		NOEC (Pseudokirchneriella subcapitata (green algae)): > 100 mg/l Exposure time: 72 h Method: OECD Test Guideline 201 Remarks: Based on data from similar materials
Toxicity to microorganisms	:	EC50: > 10 - 100 mg/l Exposure time: 3 h Method: OECD Test Guideline 209 Remarks: Based on data from similar materials

Persistence and degradability**Components:****Propylene glycol:**

Biodegradability	:	Result: Readily biodegradable. Biodegradation: 98.3 % Exposure time: 28 d Method: OECD Test Guideline 301F
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Lactic acid:

Biodegradability	:	Result: Not readily biodegradable. Remarks: Based on data from similar materials
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Bioaccumulative potential**Components:****Propylene glycol:**

Partition coefficient: n-octanol/water	:	log Pow: -1.07 Method: Regulation (EC) No. 440/2008, Annex, A.8
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Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

II**Lactic acid:**

Partition coefficient: n-octanol/water : log Pow: -0.62

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.
Do not dispose of waste into sewer.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
If not otherwise specified: Dispose of as unused product.

14. TRANSPORT INFORMATION**International Regulations****UNRTDG**

UN number : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable

IATA-DGR

UN/ID No. : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable
Labels : Not applicable
Packing instruction (cargo aircraft) : Not applicable
Packing instruction (passenger aircraft) : Not applicable

IMDG-Code

UN number : Not applicable
Proper shipping name : Not applicable
Class : Not applicable
Subsidiary risk : Not applicable
Packing group : Not applicable

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

Labels : Not applicable
 EmS Code : Not applicable
 Marine pollutant : Not applicable

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

Not applicable

15. REGULATORY INFORMATION**Related Regulations****Fire Service Law**

Not applicable to dangerous materials / designated flammables.

Chemical Substance Control Law

Priority Assessment Chemical Substance

Chemical name	Number
Propane-1,2-diol	106

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)

Chemical name	Concentration (%)	Remarks
propane-1,2-diol	>=10 - <20	From April 1st, 2025
Lactic acid	>=1 - <10	From April 1st, 2025
Sodium hydroxide	>=1 - <10	-

Substances Subject to be Indicated Names

Article 57 (Enforcement Order Article 18)

Chemical name	Remarks
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Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

propane-1,2-diol	From April 1st, 2025
Lactic acid	From April 1st, 2025
Sodium hydroxide	-

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

Not applicable

Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof

|| Not applicable

High Pressure Gas Safety Act

Not applicable

Explosive Control Law

Not applicable

Vessel Safety Law

Not regulated as a dangerous good

Aviation Law

Not regulated as a dangerous good

Marine Pollution and Sea Disaster Prevention etc Law

Bulk transportation : Noxious liquid substance(Category Z)

Pack transportation : Not 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

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

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**

Sources of key data used to compile the Safety Data Sheet : Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agency, <http://echa.europa.eu/>

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)
JP OEL JSOH : Japan. The Japan Society for Occupational Health. Recommendation of Occupational Exposure Limits

ACGIH / C : Ceiling limit
JP OEL JSOH / OEL-C : Occupational Exposure Limit-Ceiling

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,

Orbifloxacin Liquid Formulation

Version	Revision Date:	SDS Number:	Date of last issue: 2023/04/04
8.0	2023/09/30	785433-00018	Date of first issue: 2016/06/28

tion, 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