



## Material Safety Data Sheet

acc. to WHMIS 2015

Printing date 07/24/2018

Reviewed on 07/24/2018

### 1 Identification

· **Product identifier**

· **Product name: Enrofloxacin**

· **Part number:** NMIAM747B

· **CAS Number:**

93106-60-6

· **Application of the substance / the mixture** Reference material for laboratory use only

· **Details of the supplier of the safety data sheet**

· **Manufacturer/Supplier:**

VHG Labs, Inc

LGC Standards

276 Abby Road

Manchester, NH 03103

UNITED STATES OF AMERICA

Tel : +1 (603) 622-7660

Fax : +1 (603) 622-5180

eMail : [custsvc@vhglabs.com](mailto:custsvc@vhglabs.com)

Web : [www.vhglabs.com](http://www.vhglabs.com)

· **Information department:**

Product safety department

eMail : [sds-request@lgcgroup.com](mailto:sds-request@lgcgroup.com)

· **Emergency telephone number:**

INFOTRAC 24-hour Emergency telephone number:

800-535-5053 (US & Canada);

352-323-3500 (International)

### 2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS09 Environment

Aquatic Acute 1 H400 Very toxic to aquatic life.

Aquatic Chronic 2 H411 Toxic to aquatic life with long lasting effects.

· **Label elements**

· **GHS label elements**

The substance is classified and labeled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**



GHS09

· **Signal word** Warning

· **Hazard statements**

H400 Very toxic to aquatic life.

H411 Toxic to aquatic life with long lasting effects.

· **Precautionary statements**

P273 Avoid release to the environment.

(Contd. on page 2)

CA



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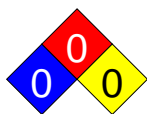
(Contd. of page 1)

*P391 Collect spillage.*

*P501 Dispose of contents/container in accordance with local/regional/national/international regulations.*

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



Health = 0

Fire = 0

Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = 1

Fire = 0

Reactivity = 0

### 3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**  
93106-60-6 Enrofloxacin
- **Identification number(s) -**
- **RTECS: VB1993650**

### 4 First-aid measures

- **Description of first aid measures**
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** Rinse mouth. Do not induce vomiting.
- **Information for doctor:**
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**  
No further relevant information available.

### 5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**  
Formation of toxic gases is possible during heating or in case of fire.

(Contd. on page 3)

CA



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(Contd. of page 2)

- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

### 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
- **Environmental precautions:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up:** Pick up mechanically.
- **Reference to other sections**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and storage

- **Handling:**
- **Precautions for safe handling** Store in cool, dry place in tightly closed receptacles.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**  
Store in a cool location.  
Please refer to the manufacturers certificate for specific storage and transport temperature conditions.  
Store only in the original receptacle.  
Keep container in a well-ventilated place. Keep away from sources of ignition and heat.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

### 8 Exposure controls/personal protection

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:** Not required.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:** Wash hands before breaks and at the end of work.
- **Breathing equipment:** Not required.
- **Protection of hands:**  
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

(Contd. on page 4)



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(Contd. of page 3)

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374



Protective gloves

- **Material of gloves** Fluorocarbon rubber (Viton)
- **Penetration time of glove material**  
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:** Safety glasses

### 9 Physical and chemical properties

#### · Information on basic physical and chemical properties

#### · General Information

#### · Appearance:

· <b>Form:</b>	Solid
· <b>Color:</b>	Light yellow
· <b>Odor:</b>	Odorless
· <b>Odor threshold:</b>	Not determined.

· **pH-value:** Not applicable.

#### · Change in condition

· <b>Melting point/Melting range:</b>	219 - 233 °C
· <b>Boiling point/Boiling range:</b>	Not determined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not determined.

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

#### · Explosion limits:

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

· **Vapor pressure:** Not applicable.

· **Density:** Not determined.

· **Relative density** Not determined.

· **Vapor density** Not applicable.

(Contd. on page 5)



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(Contd. of page 4)

- |   |  |
|---|--|
| · <b>Evaporation rate</b>                         | Not applicable.                            |
| · <b>Solubility in / Miscibility with</b>         | Chloroform                                 |
| · <b>Water at 25 °C:</b>                          | 3.4 g/l                                    |
| · <b>Partition coefficient (n-octanol/water):</b> | 0.7 logP                                   |
| · <b>Viscosity:</b>                               |  |
| <b>Dynamic:</b>                                   | Not applicable.                            |
| <b>Kinematic:</b>                                 | Not applicable.                            |
| · <b>Other information</b>                        | No further relevant information available. |

### 10 Stability and reactivity

- **Reactivity** Stable under normal conditions.
- **Chemical stability** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**  
Formation of toxic gases is possible during heating or in case of fire.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid** Heat.
- **Incompatible materials:** Strong oxidizing agents.
- **Hazardous decomposition products:** Formation of toxic gases is possible during heating or in case of fire.

### 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **LD/LC50 values that are relevant for classification:**

Oral	LD50	5000 mg/kg (rat)
	LD 50 (Intravenous)	200 mg/kg (mouse)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.

CA

(Contd. on page 6)



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(Contd. of page 5)

### 12 Ecological information

**· Toxicity****· Aquatic toxicity:**

LC50/96 h | 10 mg/l (fish)

**· Persistence and degradability** No further relevant information available.**· Behavior in environmental systems:****· Bioaccumulative potential** No further relevant information available.**· Mobility in soil** No further relevant information available.**· Ecotoxicological effects:****· Remark:** Toxic for fish**· Additional ecological information:****· General notes:**

Water hazard class 3 (Self-assessment): extremely hazardous for water

Do not allow product to reach ground water, water course or sewage system, even in small quantities.

Danger to drinking water if even extremely small quantities leak into the ground.

Also poisonous for fish and plankton in water bodies.

Toxic for aquatic organisms

**· Results of PBT and vPvB assessment****· PBT:** Not applicable.**· vPvB:** Not applicable.**· Other adverse effects** No further relevant information available.

### 13 Disposal considerations

**· Waste treatment methods****· Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

**· Uncleaned packagings:****· Recommendation:** Dispose in accordance with national regulations.

### 14 Transport information

**· UN-Number****· DOT, TDG, IMDG, IATA****· DOT****· TDG****· IMDG****· IATA**

UN3077

Environmentally hazardous substances, solid, n.o.s.  
(Enrofloxacin)3077 Environmentally hazardous substances, solid, n.o.s.  
(Enrofloxacin)ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S. (Enrofloxacin), MARINE POLLUTANTENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,  
N.O.S. (Enrofloxacin)

(Contd. on page 7)

CA



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(Contd. of page 6)

· **Transport hazard class(es)**· **DOT, TDG, IMDG, IATA**· **Class**

9 Miscellaneous dangerous substances and articles

· **Label**

9

· **Packing group**· **DOT, TDG, IMDG, IATA**

III

· **Environmental hazards:**· **Marine pollutant:**

Yes (P)

Symbol (fish and tree)

· **Special marking (TDG):**

Symbol (fish and tree)

· **Special marking (IATA):**

Symbol (fish and tree)

· **Special precautions for user**

Warning: Miscellaneous dangerous substances and articles

· **Danger code (Kemler):**

90

· **EMS Number:**

F-A,S-F

· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**

Not applicable.

· **Transport/Additional information:**· **DOT**· **Remarks:**

Special marking with the symbol (fish and tree).

· **UN "Model Regulation":**

UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCES, SOLID, N.O.S. (ENROFLOXACIN), 9, III

### 15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**· **Sara**· **Section 355 (extremely hazardous substances):** Substance is not listed.· **Section 313 (Specific toxic chemical listings):** Substance is not listed.· **TSCA (Toxic Substances Control Act):** Substance is not listed.· **Canadian substance listings:**· **Canadian Domestic Substances List (DSL)** Substance is not listed.· **Canadian Ingredient Disclosure list (limit 0.1%)** Substance is not listed.· **Canadian Ingredient Disclosure list (limit 1%)** Substance is not listed.

(Contd. on page 8)

CA



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(Contd. of page 7)

**Hazard pictograms**

GHS09

- **Signal word** Warning
- **Hazard statements**
  - H400 Very toxic to aquatic life.
  - H411 Toxic to aquatic life with long lasting effects.
- **Precautionary statements**
  - P273 Avoid release to the environment.
  - P391 Collect spillage.
  - P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
- **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other information

The information in this Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes. Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, we cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. We warrant that the chemical meets the specifications set forth on the label. We (LGC/VHG/ARMI) disclaim any other warranties, expressed or implied with regard to the product supplied hereunder, its merchantability or its fitness for a particular purpose. The user should recognize that this product can cause severe injury and even death, especially if improperly handled or the known dangers of use are not heeded. Read all precautionary information.

- **Date of preparation / last revision** 07/24/2018 / -
- **Abbreviations and acronyms:**
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - P: Marine Pollutant
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative

- **Sources**
  - Tables 3.1 and 3.2 from Annex 6 of EC 1272/2008, EC 1907/2006, EH40/2005 as amended 2011, Registry of Toxic Effects of Chemical Substances (RTECS), The Dictionary of Substances and their Effects, 1st Edition, IUCLID.