



Safety Data Sheet

acc. to OSHA HCS

Printing date 10/25/2016

Reviewed on 10/25/2016

1 Identification

· **Product identifier**

· **Product name: Bifenox (free acid)**

· **Part number:** DRE-C10580500

· **CAS Number:**
53774-07-5

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

· **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
Web : www.vhglabs.com

· **Information department:**

Product safety department
eMail : sds-request@lgcgroup.com

· **Emergency telephone number:** 800-424-9300 Chemtrec (24 hrs)

2 Hazard(s) identification

· **Classification of the substance or mixture**



GHS09 Environment

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

Aquatic Acute 2 H401 Toxic to aquatic life.

· **Label elements**

· **GHS label elements**

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

· **Hazard pictograms**



GHS09

· **Signal word** Not applicable

· **Hazard statements**

H401 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.

(Contd. on page 2)



Safety Data Sheet

acc. to OSHA HCS

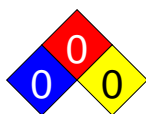
Printing date 10/25/2016

Reviewed on 10/25/2016

Product name: Bifenox (free acid)

(Contd. of page 1)

- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 0
Fire = 0
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 1
Fire = 0
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization: Substances**
- **CAS No. Description**
53774-07-5 Bifenox (free acid)
- **Identification number(s) -**
- **RTECS:** DG7886750

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:**
CO₂, 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)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 10/25/2016

Reviewed on 10/25/2016

Product name: Bifenox (free acid)

(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:**
Dispose contaminated material as waste according to item 13.
- **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:** Use suitable respiratory protective device in case of insufficient ventilation.

(Contd. on page 4)



Safety Data Sheet

acc. to OSHA HCS

Printing date 10/25/2016

Reviewed on 10/25/2016

Product name: Bifenox (free acid)

(Contd. of page 3)

· **Protection of hands:**

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
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:**

· Form:	Crystalline
· Color:	Light yellow
· Odor:	Odorless
· Odor threshold:	Not determined.

· **pH-value:** Not applicable.

· **Change in condition**

· Melting point/Melting range:	170.1 °C (338 °F)
· Boiling point/Boiling range:	Not determined.

· **Flash point:** Not applicable.

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

· **Ignition temperature:** Not determined

· **Decomposition temperature:** Not determined.

· **Auto igniting:** Not determined.

· **Danger of explosion:** Not determined.

· **Explosion limits:**

· Lower:	Not determined.
· Upper:	Not determined.

· **Vapor pressure:** Not applicable.

· **Density at 20 °C (68 °F):** 1.58 g/cm³ (13.185 lbs/gal)

(Contd. on page 5)



Safety Data Sheet

acc. to OSHA HCS

Printing date 10/25/2016

Reviewed on 10/25/2016

Product name: Bifenox (free acid)

(Contd. of page 4)

- | | |
|---|--|
| · Relative density | Not determined. |
| · Vapor density | Not applicable. |
| · Evaporation rate | Not applicable. |
| · Solubility in / Miscibility with Water at 20 °C (68 °F): | 1 g/l |
| · Partition coefficient (n-octanol/water): | 4.55 logP |
| · Viscosity: | |
| · Dynamic: | Not applicable. |
| · Kinematic: | Not applicable. |
| · Other information | 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)
Dermal	LD50	>2000 mg/kg (rabbit)

- **Primary irritant effect:**
- **on the skin:** Based on available data, the classification criteria are not met.
- **on the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** Based on available data, the classification criteria are not met.
- **Additional toxicological information:**
- **Carcinogenic categories**
- **IARC (International Agency for Research on Cancer)** Substance is not listed.
- **NTP (National Toxicology Program)** Substance is not listed.
- **OSHA-Ca (Occupational Safety & Health Administration)** Substance is not listed.

US

(Contd. on page 6)



Safety Data Sheet

acc. to OSHA HCS

Printing date 10/25/2016

Reviewed on 10/25/2016

Product name: Bifenox (free acid)

(Contd. of page 5)

12 Ecological information

· Toxicity**· Aquatic toxicity:**

EC50/72h 2.22 mg/l (Algae)

LC50/96 h >100 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, ADR, IMDG, IATA****· DOT**

UN3077

Environmentally hazardous substances, solid, n.o.s. (Bifenox (free acid))

· ADR

3077 Environmentally hazardous substances, solid, n.o.s. (Bifenox (free acid))

· IMDG

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Bifenox (free acid)), MARINE POLLUTANT

(Contd. on page 7)

US



Safety Data Sheet

acc. to OSHA HCS

Printing date 10/25/2016

Reviewed on 10/25/2016

Product name: Bifenox (free acid)

(Contd. of page 6)

· IATA	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Bifenox (free acid))
· Transport hazard class(es) · DOT, ADR, IMDG, IATA	
· Class · Label	9 Miscellaneous dangerous substances and articles 9
· Packing group · DOT, ADR, IMDG, IATA	III
· Environmental hazards: · Marine pollutant:	Yes (DOT) Symbol (fish and tree)
· Special marking (ADR): · Special marking (IATA):	Symbol (fish and tree) Symbol (fish and tree)
· Special precautions for user · Danger code (Kemler): · EMS Number: · Stowage Category · Stowage Code	Warning: Miscellaneous dangerous substances and articles 90 F-A,S-F A SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.
· 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. (BIFENOX (FREE ACID)), 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.
- Proposition 65
- Chemicals known to cause cancer: Substance is not listed.
- Chemicals known to cause reproductive toxicity for females: Substance is not listed.

(Contd. on page 8)



Safety Data Sheet

acc. to OSHA HCS

Printing date 10/25/2016

Reviewed on 10/25/2016

Product name: Bifenox (free acid)

(Contd. of page 7)

- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.
- **Carcinogenic categories**
- **EPA (Environmental Protection Agency)** Substance is not listed.
- **TLV (Threshold Limit Value established by ACGIH)** Substance is not listed.
- **NIOSH-Ca (National Institute for Occupational Safety and Health)** Substance is not listed.
- **GHS label elements**
The substance is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms**



GHS09

- **Signal word** Not applicable
- **Hazard statements**
H401 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** 10/25/2016 / -

- **Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists

(Contd. on page 9)



Safety Data Sheet

acc. to OSHA HCS

Printing date 10/25/2016

Reviewed on 10/25/2016

Product name: Bifenox (free acid)

(Contd. of page 8)

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

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

BEI: Biological Exposure Limit

Aquatic Acute 2: Hazardous to the aquatic environment - acute aquatic hazard – Category 2

Aquatic Chronic 2: Hazardous to the aquatic environment - long-term aquatic hazard – Category 2

· **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.

· **Data compared to the previous version altered.** All sections have been updated.