

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 1/11
(30495803/SDS_GEN_US/EN)

1. Identification

Product identifier used on the label

VECTOR BIO-5

Recommended use of the chemical and restriction on use

* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:
BASF Canada Inc.
100 Milverton Drive
Mississauga, ON L5R 4H1, CANADA

Contact address:
BASF CORPORATION
100 Park Avenue
Florham Park, NJ 07932
USA
Telephone: +1 973 245-6000

Emergency telephone number

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP (4357)

Registrant:
St. Louis, MO 63122
3568 Tree Court Industrial Blvd.
Whitmire Micro-Gen Research Laboratories, Inc.

Other means of identification

Chemical family: enzyme

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Skin Corr./Irrit.	2	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Resp. Sens.	1	Respiratory sensitization
STOT SE	3 (irritating to	Specific target organ toxicity — single exposure

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 2/11
(30495803/SDS_GEN_US/EN)

STOT RE	respiratory system) 2 (by inhalation)	Specific target organ toxicity — repeated exposure
---------	--	--

Label elements

Pictogram:



Signal Word:
Danger

Hazard Statement:

H318	Causes serious eye damage.
H315	Causes skin irritation.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.

Precautionary Statements (Prevention):

P280	Wear protective gloves and eye/face protection.
P260	Do not breathe dust/gas/mist/vapours.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P284	In case of inadequate ventilation wear respiratory protection.
P272	Contaminated work clothing should not be allowed out of the workplace.
P270	Do not eat, drink or smoke when using this product.
P264	Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303 + P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P330	Rinse mouth.
P362 + P364	Take off contaminated clothing and wash it before reuse.

Precautionary Statements (Storage):

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Precautionary Statements (Disposal):

P501	Dispose of contents/container to hazardous or special waste collection point.
------	---

Hazards not otherwise classified

Labeling of special preparations (GHS):

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 72 % dermal

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 58 % oral

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 3/11
(30495803/SDS_GEN_US/EN)

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 72 % Inhalation - vapour
The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 72 % Inhalation - mist

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

CAUTION:
Prolonged contact may cause allergic skin reactions.
KEEP OUT OF REACH OF CHILDREN.
May cause eye irritation.
Avoid ingestion.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of mists/vapours.
Wash thoroughly after handling.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical name</u>
64-02-8	10.0 - 15.0%	tetrasodium ethylenediaminetetraacetate
2634-33-5	10.0 - 15.0%	1,2-benzisothiazol-3(2H)-one
68920-42-3	10.0 - 15.0%	Bacteria, complex with amylase and proteinase

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical name</u>
	100.0 %	Proprietary ingredients

4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. If the patient is likely to become unconscious, place and transport in stable sideways position (recovery position). Immediately remove contaminated clothing.

If inhaled:

Keep patient calm, remove to fresh air, seek medical attention. Immediately administer a corticosteroid from a controlled/metered dose inhaler.

If on skin:

Immediately wash thoroughly with plenty of water, apply sterile dressings, consult a skin specialist.

If in eyes:

Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:

Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 4/11
(30495803/SDS_GEN_US/EN)

Most important symptoms and effects, both acute and delayed

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

Indication of any immediate medical attention and special treatment needed

Note to physician

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
water spray, foam

Special hazards arising from the substance or mixture

Hazards during fire-fighting:
carbon monoxide, carbon dioxide,
If product is heated above decomposition temperature, toxic vapours will be released. The substances/groups of substances mentioned can be released in case of fire.

Advice for fire-fighters

Protective equipment for fire-fighting:
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

Evacuate area of all unnecessary personnel. Contain contaminated water/firefighting water. Do not allow to enter drains or waterways.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Take appropriate protective measures. Clear area. Shut off source of leak only under safe conditions. Ensure adequate ventilation. Wear suitable personal protective clothing and equipment.

Environmental precautions

Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater. Contain contaminated water/firefighting water.

Methods and material for containment and cleaning up

Dike spillage. Pick up with suitable absorbent material. Place into suitable containers for reuse or disposal in a licensed facility. After decontamination, spill area can be washed with water. Collect wash water for approved disposal.

7. Handling and Storage

Precautions for safe handling

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 5/11
(30495803/SDS_GEN_US/EN)

Provide good ventilation of working area (local exhaust ventilation if necessary). Keep container tightly sealed. Protect against heat. Handle and open container with care. Do not open until ready to use. Once container is opened, content should be used as soon as possible. Avoid aerosol formation. Avoid dust formation. Provide means for controlling leaks and spills. Do not return residues to the storage containers. Follow label warnings even after container is emptied. The substance/ product may be handled only by appropriately trained personnel. Avoid all direct contact with the substance/product. Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts/mists/vapours. Wear suitable personal protective clothing and equipment.

Protection against fire and explosion:

The relevant fire protection measures should be noted. Fire extinguishers should be kept handy. Avoid extreme heat. Keep away from oxidizable substances. Electrical equipment should conform to national electric code.

Conditions for safe storage, including any incompatibilities

Segregate from incompatible substances. Segregate from foods and animal feeds.

Further information on storage conditions: Keep only in the original container in a cool, dry, well-ventilated place away from ignition sources, heat or flame. Protect containers from physical damage. Protect against contamination.

8. Exposure Controls/Personal Protection

Components with occupational exposure limits

2-aminoethanol	OSHA PEL	PEL 3 ppm 6 mg/m ³ ; TWA value 3 ppm 8 mg/m ³ ; STEL value 6 ppm 15 mg/m ³ ;
	ACGIH TLV	TWA value 3 ppm ; STEL value 6 ppm ;

Advice on system design:

Whenever possible, engineering controls should be used to minimize the need for personal protective equipment.

Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. For situations where the airborne concentrations may exceed the level for which an air purifying respirator is effective, or where the levels are unknown or Immediately Dangerous to Life or Health (IDLH), use NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions.

Hand protection:

Chemical resistant protective gloves, Protective glove selection must be based on the user's assessment of the workplace hazards.

Eye protection:

Safety glasses with side-shields. Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 6/11
(30495803/SDS_GEN_US/EN)

General safety and hygiene measures:

Wear long sleeved work shirt and long work pants in addition to other stated personal protective equipment. Work place should be equipped with a shower and an eye wash. Handle in accordance with good industrial hygiene and safety practice. Personal protective equipment should be decontaminated prior to reuse. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Take off immediately all contaminated clothing. Store work clothing separately. Hands and/or face should be washed before breaks and at the end of the shift. No eating, drinking, smoking or tobacco use at the place of work. Keep away from food, drink and animal feeding stuffs.

9. Physical and Chemical Properties

Form:	liquid	
Odour:	characteristic	
Odour threshold:	Not determined due to respiratory tract sensitizing properties.	
Colour:	dark green	
pH value:	approx. 7.5 - 9.5 (20 °C)	
Melting point:	The product has not been tested.	
Boiling point:	not determined	
Flash point:	> 100 °C Information based on the main components.	
Flammability:	not applicable	
Lower explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Upper explosion limit:	As a result of our experience with this product and our knowledge of its composition we do not expect any hazard as long as the product is used appropriately and in accordance with the intended use.	
Autoignition:	not applicable	
Vapour pressure:	not applicable	
Density:	approx. 1.01 g/cm ³ (20 °C)	
Vapour density:	not applicable	
Partitioning coefficient n-octanol/water (log Pow):	The statements are based on the properties of the individual components.	
<i>Information on: 2-aminoethanol</i>		
Partitioning coefficient n-octanol/water (log Pow):	-2.3 (25 °C)	(OECD Guideline 107)

Self-ignition temperature:	not self-igniting	
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.	
Viscosity, dynamic:	not determined	
Solubility in water:	dispersible	
Evaporation rate:	not applicable	
Other Information:	If necessary, information on other physical and chemical parameters is indicated in this section.	

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 7/11
(30495803/SDS_GEN_US/EN)

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Oxidizing properties:

Based on its structural properties the product is not classified as oxidizing.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

No hazardous reactions known.

Conditions to avoid

See MSDS section 7 - Handling and storage.

Incompatible materials

strong acids, strong bases, strong oxidizing agents

Hazardous decomposition products

Decomposition products:

No hazardous decomposition products known.

Thermal decomposition:

No decomposition if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Relatively nontoxic after single ingestion. Ingestion may result in irritation and gastric disturbances. Can cause sensitization of the respiratory tract in allergic persons.

Oral

Type of value: ATE

Value: 1,120 mg/kg

Inhalation

Type of value: ATE

Value: > 20.0000 mg/l

Determined for vapor

Type of value: ATE

Value: > 5.0000 mg/l

Determined for mist

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 8/11
(30495803/SDS_GEN_US/EN)

Information on: 2-aminoethanol

Type of value: LC50

Species: rat

Value: > 1.3 mg/l (IRT)

Exposure time: 6 h

The vapour was tested.

The European Union (EU) has classified this substance as 'harmful'.

Dermal

Type of value: ATE

Value: > 5,000 mg/kg

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation / corrosion

Assessment of irritating effects: Contact may result in eye irritation. Skin contact may cause irritation and dermatitis. Prolonged contact with the product can result in skin irritation.

Sensitization

Assessment of sensitization: Exposure to respirable aerosols and dusts of various enzymes may cause sensitization of the respiratory tract in predisposed individuals. Prolonged or repeated skin contact may cause sensitization or allergic reactions.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-aminoethanol

Assessment of repeated dose toxicity: May affect the liver and kidneys as indicated in animal studies.

After repeated exposure the prominent effect is local irritation. The substance may cause damage to the upper respiratory tract after repeated inhalation, as shown in animal studies.

Genetic toxicity

Assessment of mutagenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Mutagenicity tests revealed no genotoxic potential.

Carcinogenicity

Assessment of carcinogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. The results of various animal studies gave no indication of a carcinogenic effect.

Reproductive toxicity

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-aminoethanol

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 9/11
(30495803/SDS_GEN_US/EN)

Assessment of reproduction toxicity: The product has not been tested. The statement has been derived from substances/products of a similar structure or composition. The potential to impair fertility cannot be excluded when given at maternally toxic doses. Because the relevance of the results to human health is unclear, further tests will be initiated.

Teratogenicity

Assessment of teratogenicity: The product has not been tested. The statement has been derived from the properties of the individual components. Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Other Information

Attention - The product has not yet been fully tested. Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11., Further important symptoms and effects are so far not known.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.

The product has not been tested. The statement has been derived from the properties of the individual components.

Toxicity to fish

Information on: 2-aminoethanol

LC50 (96 h) 349 mg/l, Cyprinus carpio (Directive 92/69/EEC, C.1, semistatic)

Nominal values (confirmed by concentration control analytics)

LC50 (96 h) 170 mg/l, Carassius auratus (APHA 1971, static)

The statement of the toxic effect relates to the analytically determined concentration. Literature data.

Aquatic invertebrates

Information on: 2-aminoethanol

EC50 (48 h) 65 mg/l, Daphnia magna (Directive 84/449/EEC, C.2, static)

Nominal values (confirmed by concentration control analytics)

Aquatic plants

Information on: 2-aminoethanol

EC50 (72 h) 2.5 mg/l (growth rate), Selenastrum capricornutum (OECD Guideline 201)

Literature data.

EC50 (72 h) 22 mg/l (growth rate), Scenedesmus subspicatus (Guideline 92/69/EEC, C.3)

Nominal values (confirmed by concentration control analytics)

No observed effect concentration (72 h) 1 mg/l (growth rate), Selenastrum capricornutum (OECD Guideline 201)

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 10/11
(30495803/SDS_GEN_US/EN)

Literature data.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

The product has not been tested. The statement has been derived from the properties of the individual components.

Elimination information

Biodegradable.

Elimination information

Information on: 2-aminoethanol

> 90 % DOC reduction (21 d) (OECD 301 A (new version)) (aerobic, activated sludge, domestic)

Bioaccumulative potential

Assessment bioaccumulation potential

The product has not been tested. The statement has been derived from the properties of the individual components.

Assessment bioaccumulation potential

Information on: 2-aminoethanol

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments

The product has not been tested. The statement has been derived from the properties of the individual components.

Information on: 2-aminoethanol

*The substance will not evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.*

Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control.

13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with national, state and local regulations.

Safety Data Sheet

VECTOR BIO-5

Revision date : 2015/12/01
Version: 3.0

Page: 11/11
(30495803/SDS_GEN_US/EN)

Container disposal:

Rinse thoroughly at least three times (triple rinse) in accordance with EPA recommendations. Consult state or local disposal authorities for approved alternative procedures such as container recycling. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

RCRA:

This product is not regulated by RCRA.

14. Transport Information

Land transport

USDOT

Not classified as a dangerous good under transport regulations

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories): Acute;

16. Other Information

SDS Prepared by:

BASF NA Product Regulations
SDS Prepared on: 2015/12/01

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

END OF DATA SHEET