

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : ZipChip Peptides BGE

1.2. Recommended use and restrictions on use

Use of the substance/mixture : For research and development use only.
Restrictions on use : Not for use in diagnostic procedures.

1.3. Supplier

Manufacturer

908 Devices
645 Summer St
Boston, MA, 02210
USA
T 1 (857) 254 - 1500
908devices.com

1.4. Emergency telephone number

Emergency number : 1 (844) 908 - 4357

SECTION 2: Hazard(s) identification


2.1. Classification of the substance or mixture

GHS US classification

Flam. Liq. 2	Highly flammable liquid and vapor
Acute Tox. 4 (Oral)	Harmful if swallowed
Eye Irrit. 2A	Causes serious eye irritation

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US)	:	
Signal word (GHS US)	:	Danger
Hazard statements (GHS US)	:	Highly flammable liquid and vapor Harmful if swallowed Causes serious eye irritation
Precautionary statements (GHS US)	:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground/Bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Wash hands, forearms and face thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection. If swallowed: Call a poison center or doctor if you feel unwell.

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Rinse mouth.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

Store in a well-ventilated place. Keep cool.

Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards which do not result in classification

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%
Acetonitrile	CAS-No.: 75-05-8	< 50
Formic acid	CAS-No.: 64-18-6	< 2

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
First-aid measures after skin contact	: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash clothing before re-using. Get medical attention if irritation develops and persists.
First-aid measures after eye contact	: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. Call a POISON CENTER or doctor/physician if you feel unwell. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation	: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/effects after ingestion	: Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.

4.3. Immediate medical attention and special treatment, if necessary

Symptoms may be delayed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

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SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Dry chemical powder. Alcohol resistant foam. Carbon dioxide (CO₂).
Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

5.2. Specific hazards arising from the chemical

Fire hazard : Highly flammable liquid and vapor. Products of combustion may include, and are not limited to: oxides of carbon. Nitrogen oxides. Hydrogen cyanide. Toxic vapors. Irritating vapors.
Explosion hazard : May form flammable/explosive vapor-air mixture. Heavier than air, vapors may travel long distances along ground, ignite and flash back to source.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Move containers away from the fire area if this can be done without risk. Cool closed containers exposed to fire with water spray. Prevent runoff from entering water courses, sewers and basements.
Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Use special care to avoid static electric charges. Remove all sources of ignition.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Stop leak if safe to do so. Remove ignition sources. Absorb and/or contain spill with inert material (sand, vermiculite or other appropriate material), then place in suitable container. Do not flush into surface water or sewer system. Wear recommended personal protective equipment.
Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Provide ventilation.

6.4. Reference to other sections

For further information refer to section 8: "Exposure controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapors are flammable.

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Precautions for safe handling	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes and clothing. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke. Take precautionary measures against static discharge. Use only non-sparking tools. Use only outdoors or in a well-ventilated area.
Hygiene measures	: Take off immediately all contaminated clothing and wash it before reuse. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Proper grounding procedures to avoid static electricity should be followed.
Storage conditions	: Keep out of the reach of children. Keep container tightly closed. Do not store in unlabelled containers. Store in dry, well-ventilated area. Keep cool. Keep out of direct sunlight. Containers which are opened should be properly resealed and kept upright to prevent leakage. Protect from physical damage. Store locked up.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ZipChip Peptides BGE	
No additional information available	
Acetonitrile (75-05-8)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	20 ppm
ACGIH chemical category	Not Classifiable as a Human Carcinogen, Skin - potential significant contribution to overall exposure by the cutaneous route
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (TWA) [1]	70 mg/m ³
OSHA PEL (TWA) [2]	40 ppm
USA - IDLH - Occupational Exposure Limits	
IDLH [ppm]	137 ppm
USA - NIOSH - Occupational Exposure Limits	
NIOSH REL (TWA)	34 mg/m ³
NIOSH REL TWA [ppm]	20 ppm
Formic acid (64-18-6)	
USA - ACGIH - Occupational Exposure Limits	
ACGIH OEL TWA [ppm]	5 ppm
ACGIH OEL STEL [ppm]	10 ppm
USA - OSHA - Occupational Exposure Limits	
OSHA PEL (TWA) [1]	9 mg/m ³
OSHA PEL (TWA) [2]	5 ppm
USA - IDLH - Occupational Exposure Limits	
IDLH [ppm]	30 ppm

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Formic acid (64-18-6)

USA - NIOSH - Occupational Exposure Limits

NIOSH REL (TWA)	9 mg/m ³
NIOSH REL TWA [ppm]	5 ppm

8.2. Appropriate engineering controls

Appropriate engineering controls	: Ensure good ventilation of the work station. Provide readily accessible eye wash stations and safety showers.
Environmental exposure controls	: Avoid release to the environment.

8.3. Individual protection measures/Personal protective equipment

Hand protection:

Wear suitable gloves resistant to chemical penetration. Consult glove manufacturer's product information on material suitability and material thickness.

Eye protection:

Wear eye/face protection

Skin and body protection:

Chemical resistant apron. Flame retardant and anti-static material recommended

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Other information:

Handle in accordance with good industrial hygiene and safety procedures. Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Transparent.
Color	: No data available
Odor	: Pungent
Odor threshold	: No data available
pH	: 2.2
Melting point	: No data available
Freezing point	: No data available
Boiling point	: 81 °C (177.8 °F)
Flash point	: 2 °C (35.6 °F)
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Highly flammable liquid and vapor.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: Water: 100 %
Partition coefficient n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

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Explosion limits : No data available
Explosive properties : No data available
Oxidizing properties : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under normal conditions. May form flammable/explosive vapor-air mixture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Heat. Sparks. open flames. Incompatible materials. Sources of ignition. Direct sunlight.

10.5. Incompatible materials

Strong acids. Strong bases. Strong oxidizers. Halogenated compounds. Perchlorates. Sulfites.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon. Nitrogen oxides. Hydrogen cyanide. May release flammable gases.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Harmful if swallowed.
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

ZipChip Peptides BGE	
ATE US (oral)	885.51 mg/kg body weight
Acetonitrile (75-05-8)	
LD50 oral rat	450 – 787 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	26.8 mg/l/4h
LC50 inhalation mouse	6.022 mg/l.4h
Formic acid (64-18-6)	
LD50 oral rat	1100 mg/kg
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LC50 inhalation rat	7.85 mg/l/4h
Skin corrosion/irritation	: Not classified. pH: 2.2

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Serious eye damage/irritation	: Causes serious eye irritation. pH: 2.2
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified

Formic acid (64-18-6)	
NOAEL (chronic,oral,animal/male,2 years)	400 mg/kg body weight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:Effect type: toxicity (migrated information)

Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified

Acetonitrile (75-05-8)	
NOAEC (inhalation,rat,gas,90 days)	400 ppm Animal: rat, Guideline: other:

Formic acid (64-18-6)	
LOAEL (oral,rat,90 days)	2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
NOAEL (oral,rat,90 days)	400 mg/kg body weight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
NOAEC (inhalation,rat,dust/mist/fume,90 days)	0.244 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)

Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after inhalation	: May cause irritation to the respiratory tract.
Symptoms/effects after skin contact	: May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Symptoms/effects after eye contact	: Causes serious eye irritation. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Symptoms/effects after ingestion	: Harmful if swallowed. May cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: May cause long-term adverse effects in the aquatic environment.
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Acetonitrile (75-05-8)	
LC50 - Fish [1]	1600 – 1690 mg/l (Exposure time: 96 h - Species: Pimephales promelas [flow-through])
EC50 - Crustacea [1]	> 1000 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	1000 mg/l (Exposure time: 96 h - Species: Pimephales promelas [static])
EC50 72h - Algae [1]	3560 mg/l Test organisms (species): Phaeodactylum tricornutum
EC50 72h - Algae [2]	9696 mg/l Test organisms (species): Phaeodactylum tricornutum
LOEC (chronic)	> 960 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	960 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	102 mg/l Test organisms (species): Oryzias latipes Duration: '21 d'

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Formic acid (64-18-6)	
LC50 - Fish [1]	130 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	120 mg/l (Exposure time: 48 h - Species: Daphnia magna)
EC50 - Crustacea [2]	138 – 165.6 mg/l (Exposure time: 48 h - Species: Daphnia magna [Static])
EC50 72h - Algae [1]	26.9 mg/l (Species: Desmodesmus subspicatus)
EC50 96h - Algae [1]	25 mg/l (Species: Desmodesmus subspicatus)
LOEC (chronic)	> 100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	≥ 100 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

ZipChip Peptides BGE	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

ZipChip Peptides BGE	
Bioaccumulative potential	Not established.

Acetonitrile (75-05-8)	
Partition coefficient n-octanol/water	-0.34

Formic acid (64-18-6)	
BCF - Fish [1]	(0.22 dimensionless)
Partition coefficient n-octanol/water	-1.9 (at 23 °C (at pH 5))

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : No other effects known.

SECTION 13: Disposal considerations

13.1. Disposal methods

Product/Packaging disposal recommendations : Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation. The generation of waste should be avoided or minimized wherever possible.

Additional information : Handle empty containers with care because residual vapors are flammable.

SECTION 14: Transport information

In accordance with DOT / IMDG / IATA

14.1. UN number

DOT NA No : UN1648
UN-No. (IMDG) : UN1648
UN-No. (IATA) : UN1648

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according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Acetonitrile
Proper Shipping Name (IMDG) : ACETONITRILE
Proper Shipping Name (IATA) : Acetonitrile

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : 3
Hazard labels (DOT) : 3



IMDG

Transport hazard class(es) (IMDG) : 3
Hazard labels (IMDG) : 3



IATA

Transport hazard class(es) (IATA) : 3
Hazard labels (IATA) : 3



14.4. Packing group

Packing group (DOT) : II
Packing group (IMDG) : II
Packing group (IATA) : II

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

Special transport precautions : Do not handle until all safety precautions have been read and understood.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory.

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15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Issue date : 04/28/2023
Revision date : 1/30/2024
Other information : None.
Prepared by : Nexreg Compliance Inc.
www.Nexreg.com



Full text of H-phrases	
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Irrit. 2A	Serious eye damage/eye irritation Category 2A
Flam. Liq. 2	Flammable liquids Category 2

Indication of changes:			
Section	Changed item	Change	Comments
14	Transport information	Modified	V1.1
SDS	Product name	Modified	V1.1
SDS	GHS Classification	Modified	V1.2

Safety Data Sheet (SDS), USA

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