

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
 Product name : WAVE Optimized® HA Buffer B
 Product code : 553416
 Other means of identification : 0.1M n-Hexylammonium Acetate with 50% (vol) Acetonitrile

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Buffer

1.3. Details of the supplier of the safety data sheet

ADS Biotec, Inc.
 7409 Irvington Road
 Omaha, NE 68122 - USA
support@adsbiotec.com

1.4. Emergency telephone number

Emergency Contact Number : USA: 1-800-255-3924 (CHEMTEL 24hr); International: +1-813-248-0585 (CHEMTEL 24hr)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

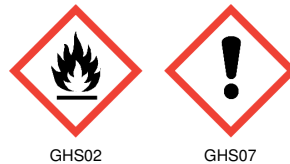
GHS-US classification

Flam. Liq. 2 H225
 Eye Irrit. 2A H319

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H225 - Highly flammable liquid and vapour
 H319 - Causes serious eye irritation

Precautionary statements (GHS-US) : P210 - Keep away from heat, sparks, open flames, hot surfaces. - No smoking
 P233 - Keep container tightly closed
 P240 - Ground/bond container and receiving equipment
 P241 - Use explosion-proof electrical, ventilating, lighting equipment
 P242 - Use only non-sparking tools
 P243 - Take precautionary measures against static discharge
 P264 - Wash hands thoroughly after handling
 P280 - Wear protective gloves, protective clothing, eye protection, face protection
 P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P337+P313 - If eye irritation persists: Get medical advice/attention
 P370+P378 - In case of fire: Use Water spray for extinction
 P403+P235 - Store in a well-ventilated place. Keep cool
 P501 - Dispose of contents/container to licensed waste management site

2.3. Other hazards

Other hazards not contributing to the classification : Repeated or prolonged contact may cause skin irritation. Inhalation of vapours may cause respiratory irritation.

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2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

Full text of H-phrases: see section 16

3.2. Mixture

| Name | Product identifier | % | GHS-US classification |
|-----------------------|----------------------|-------|--|
| Acetonitrile | (CAS No) 75-05-8 | 50 | Flam. Liq. 2, H225 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation), H332 Eye Irrit. 2A, H319 |
| Hexylammonium Acetate | (CAS No) 366793-17-1 | 1 - 5 | Not classified |

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
- First-aid measures after inhalation : Remove to fresh air, keep the patient warm and at rest. If symptoms develop obtain medical attention.
- First-aid measures after skin contact : Wash with plenty of soap and water. Wash contaminated clothing before reuse. If symptoms develop obtain medical attention.
- First-aid measures after eye contact : Rinse immediately with plenty of water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If symptoms develop obtain medical attention.
- First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Give 100 - 200 ml of water to drink. If symptoms develop obtain medical attention.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after skin contact : Repeated and/or prolonged skin contact may cause irritation.
- Symptoms/injuries after eye contact : Causes eye irritation.
- Symptoms/injuries after ingestion : Ingestion may cause nausea, vomiting and diarrhea.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
- Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Highly flammable liquid and vapour.
- Explosion hazard : On exposure to high temperature, may decompose, releasing explosive vapours.
- Reactivity : Stable under normal conditions.

5.3. Advice for firefighters

- Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Avoid fire-fighting water entering the environment.
- Protection during firefighting : Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Avoid all contact with skin, eyes, or clothing.

6.1.1. For non-emergency personnel

- Emergency procedures : Evacuate unnecessary personnel.

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6.1.2. For emergency responders

- Protective equipment : Wear suitable protective clothing and eye or face protection.
Emergency procedures : Remove ignition sources. Avoid contact with eyes, skin and clothing. Ensure adequate ventilation.

6.2. Environmental precautions

Avoid release to the environment. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

- Methods for cleaning up : Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Wash spill area with soapy water.

6.4. Reference to other sections

SECTION 8: Exposure controls/personal protection. SECTION 13: Disposal considerations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.
Precautions for safe handling : Keep away from open flames, hot surfaces and sources of ignition. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Avoid contact with skin, eyes and clothing. Provide good ventilation in process area to prevent formation of vapour. No naked lights. No smoking. Use only non-sparking tools.
Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment.
Storage conditions : Keep only in the original container in a cool well ventilated place.
Incompatible products : Acids. Strong bases. Metals. Oxidizing agent. Reducing agents. Combustible materials.
Incompatible products : Sources of ignition. Direct sunlight. Heat sources.

7.3. Specific end use(s)

A component of systems for genetic analysis of nucleic acid samples in a professional diagnostic or research laboratory.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| Acetonitrile (75-05-8) | | |
|------------------------|-------------------------------------|----------------------|
| USA OSHA | OSHA PEL (TWA) (mg/m ³) | 70 mg/m ³ |
| USA OSHA | OSHA PEL (TWA) (ppm) | 40 ppm |

8.2. Exposure controls

- Appropriate engineering controls : Ensure adequate ventilation.
Personal protective equipment : Avoid all unnecessary exposure.
Hand protection : protective gloves.
Eye protection : Safety glasses with face shield.
Skin and body protection : Wear suitable protective clothing.
Respiratory protection : Not required under normal use.
Thermal hazard protection : Not required for normal conditions of use.
Environmental exposure controls : Not normally required.
Other information : Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

- Physical state : Liquid
Colour : Colourless.
Odour : No data available
Odour threshold : No data available
pH : 7.1 - 7.7
Relative evaporation rate (butylacetate=1) : No data available
Melting point : No data available

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| | |
|----------------------------------|------------------------|
| Freezing point | : No data available |
| Boiling point | : No data available |
| Flash point | : 6 °C 42.8 °F |
| Self ignition temperature | : No data available |
| Decomposition temperature | : No data available |
| Flammability (solid, gas) | : No data available |
| Vapour pressure | : No data available |
| Relative vapour density at 20 °C | : No data available |
| Relative density | : 0.98 @20 °C (68 °F) |
| Solubility | : Miscible with water. |
| Log Pow | : No data available |
| Log Kow | : No data available |
| Viscosity, kinematic | : No data available |
| Viscosity, dynamic | : No data available |
| Explosive properties | : No data available |
| Oxidising properties | : No data available |
| Explosive limits | : 3 - 16 vol % |

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Stable under normal conditions.

10.2. Chemical stability

Highly flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.4. Conditions to avoid

Extremely high or low temperatures. Ignition sources.

10.5. Incompatible materials

Acids. metals. Strong bases. Oxidizing agents. Reducing agents.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide. Nitrogen oxides. Ammonia.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

| | |
|--|--|
| Acute toxicity | : Not classified |
| Skin corrosion/irritation | : Not classified pH: 7.1 - 7.7 |
| Serious eye damage/irritation | : Causes serious eye irritation. pH: 7.1 - 7.7 |
| Respiratory or skin sensitisation | : Not classified |
| Germ cell mutagenicity | : Not classified Based on available data, the classification criteria are not met |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified Based on available data, the classification criteria are not met |
| Specific target organ toxicity (single exposure) | : Not classified |
| Specific target organ toxicity (repeated exposure) | : Not classified Based on available data, the classification criteria are not met |

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| | |
|---|--|
| Aspiration hazard | : Not classified Based on available data, the classification criteria are not met |
| Potential Adverse human health effects and symptoms | : Based on available data, the classification criteria are not met. |
| Symptoms/injuries after skin contact | : Repeated and/or prolonged skin contact may cause irritation. |
| Symptoms/injuries after eye contact | : Causes eye irritation. |
| Symptoms/injuries after ingestion | : Ingestion may cause nausea, vomiting and diarrhea. |

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Not classified.

| WAVE Optimized® HA Buffer B | |
|-----------------------------|---|
| LC50 fish | 1 g/l 96 h - Fathead minnow (Pimephales promelas) |

12.2. Persistence and degradability

| WAVE Optimized® HA Buffer B | |
|-------------------------------|---------------------------|
| Persistence and degradability | No information available. |

12.3. Bioaccumulative potential

| WAVE Optimized® HA Buffer B | |
|-----------------------------|---------------------------|
| Bioaccumulative potential | No information available. |

12.4. Mobility in soil

| WAVE Optimized® HA Buffer B | |
|-----------------------------|---------------------------|
| Ecology - soil | No information available. |

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|--------------------------------|---|
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. Empty containers should be taken to an approved waste handling site for recycling or disposal. Dispose of contents/container to ... |
| Additional information | : Handle empty containers with care because residual vapours are flammable. |
| Ecology - waste materials | : Avoid release to the environment. |

SECTION 14: Transport information

| | |
|---|---|
| In accordance with DOT | |
| UN-No.(DOT) | : 1648 |
| DOT Proper Shipping Name | : Acetonitrile |
| Department of Transportation (DOT) Hazard Classes | : 3 - Class 3 - Flammable and combustible liquid 49 CFR 173.120 |
| Hazard labels (DOT) | : 3 - Flammable liquid |



| | |
|--|----------------------|
| Packing group (DOT) | : II - Medium Danger |
| DOT Packaging Exceptions (49 CFR 173.xxx) | : 150 |
| DOT Packaging Non Bulk (49 CFR 173.xxx) | : 202 |
| DOT Packaging Bulk (49 CFR 173.xxx) | : 242 |
| DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) | : 5L |
| DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) | : 60 L |

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|-----------------------------|---|
| DOT Vessel Stowage Location | : B - (i) The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers, or one passenger per each 3 m of overall vessel length; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this section is exceeded. |
| DOT Vessel Stowage Other | : 40 - Stow "clear of living quarters" |

Additional information

| | |
|-------------------------------|------------------------------------|
| Other information | : Not classified. |
| Special transport precautions | : No special precautions required. |

Transport by sea

| | |
|-----------------------------|--|
| UN-No. (IMDG) | : 1648 |
| Proper Shipping Name (IMDG) | : ACETONITRILE |
| Class (IMDG) | : 3 - Flammable liquids |
| Packing group (IMDG) | : II - substances presenting medium danger |

Air transport

| | |
|-----------------------------|-------------------------|
| UN-No. (IATA) | : 1648 |
| Proper Shipping Name (IATA) | : ACETONITRILE |
| Class (IATA) | : 3 - Flammable Liquids |
| Packing group (IATA) | : II - Medium Danger |

SECTION 15: Regulatory information

15.1. US Federal regulations

Acetonitrile (75-05-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Listed on SARA Section 313 (Specific toxic chemical listings)

| | |
|--|---------|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) : | 5000 lb |
|--|---------|

15.2. International regulations

CANADA

WAVE Optimized HA Buffer A

| | |
|----------------------|--|
| WHMIS Classification | Class B Division 2 - Flammable Liquid Class D Division 1 Subdivision B - Toxic material causing immediate and serious toxic effects Class E - Corrosive Material |
|----------------------|--|

15.2.2. National regulations

No additional information available

15.3. US State regulations

Acetonitrile (75-05-8)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

| | |
|----------------------------|--|
| Abbreviations and acronyms | : ADR (Accord européen relatif au transport international des marchandises Dangereuses par Route). CAS (Chemical Abstracts Service) number. IARC (International Agency for Research on Cancer). IATA (International Air Transport Association). IMDG (International Maritime Dangerous Goods Code). RID (Règlement concernant le transport international ferroviaire de marchandises). |
| Other information | : None. |

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Full text of H-phrases: see section 16:

| | |
|---------------------------|--|
| Acute Tox. 4 (Dermal) | Acute toxicity (dermal), Category 4 |
| Acute Tox. 4 (Inhalation) | Acute toxicity (inhal.), Category 4 |
| 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 |
| H225 | Highly flammable liquid and vapour |
| H302 | Harmful if swallowed |
| H312 | Harmful in contact with skin |
| H319 | Causes serious eye irritation |
| H332 | Harmful if inhaled |

NCEC SDS US GHS (Hazcom 2012)

The information and recommendations contained herein are based upon data believed to be up-to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information and recommendations contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by (incorrect) use, handling, purchase, resale, or exposure to our product. Customers and users of our product must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24.