1 Identification

· Product identifier
· Trade name: TBE Buffer (5X)
· Article number: 01-871-1

- Details of the supplier of the safety data sheet
- Manufacturer/Supplier:
  Biological Industries Israel Beit Haemek Ltd.
  BEIT HAEMEK 25115
  ISRAEL
  michalb@bioind.com
- Information department: Product safety department.
- Emergency telephone number: During normal opening times: +972/4/9962467

2 Hazard(s) identification

- Classification of the substance or mixture
  GHS08 Health hazard
  Rep. 1A H360 May damage fertility or the unborn child.

- Label elements
- GHS label elements
  The product is classified and labeled according to the Globally Harmonized System (GHS).
- Hazard pictograms
  GHS08

- Signal word Danger
- Hazard statements
  May damage fertility or the unborn child.
- Precautionary statements
  Obtain special instructions before use.
  Do not handle until all safety precautions have been read and understood.
  Wear protective gloves/protective clothing/eye protection/face protection.
  IF exposed or concerned: Get medical advice/attention.
  Store locked up.
  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 = 0
  FIRE = 0
  REACTIVITY = 0

(Contd. on page 2)
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· Other hazards
  · Results of PBT and vPvB assessment
    · PBT: Not applicable.
    · vPvB: Not applicable.

3 Composition/information on ingredients

· Chemical characterization: Mixtures
  · Description: Mixture of the substances listed below with nonhazardous additions.

· Dangerous components:
  
  10043-35-3 boric acid <3.0%

4 First-aid measures

· Description of first aid measures
  · After inhalation: Supply fresh air; consult doctor in case of complaints.
  · After skin contact: Generally the product does not irritate the skin.
  · After eye contact: Rinse opened eye for several minutes under running water.
  · After swallowing: If symptoms persist consult doctor.
  · 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: Use fire fighting measures that suit the environment.
  · Special hazards arising from the substance or mixture No further relevant information available.
  · Advice for firefighters
  · Protective equipment: No special measures required.

6 Accidental release measures

· Personal precautions, protective equipment and emergency procedures No personal precautions required
  · Environmental precautions: Do not allow to enter sewers/ surface or ground water.
  · Methods and material for containment and cleaning up: No special measures required.
  · 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.
  · Protective Action Criteria for Chemicals
    · PAC-1:
      
      77-86-1 trometamol 18 mg/m³
      10043-35-3 boric acid 6 mg/m³
      139-33-3 disodium dihydrogenethylenediaminetetraacetate 11 mg/m³
47.0.4

· PAC-2:
  - 77-86-1 trometamol 190 mg/m³
  - 10043-35-3 boric acid 23 mg/m³
  - 139-33-3 disodium dihydrogenethylenediaminetetraacetate 120 mg/m³
  - 1310-73-2 sodium hydroxide 5 mg/m³

· PAC-3:
  - 77-86-1 trometamol 1,200 mg/m³
  - 10043-35-3 boric acid 830 mg/m³
  - 139-33-3 disodium dihydrogenethylenediaminetetraacetate 730 mg/m³
  - 1310-73-2 sodium hydroxide 50 mg/m³

7 Handling and storage

· Handling:
  - Precautions for safe handling: Prevent formation of dust.
  - 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: Room Temperature
    - Information about storage in one common storage facility: Not required

· Further information about storage conditions:
  - Specific end use(s): Protect from heat and direct sunlight.

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:

    | Chemical | Limit Value |
    |----------|-------------|
    | 10043-35-3 boric acid | 6* mg/m³ (Short-term value) |
    |               | 2* mg/m³ (Long-term value) |

    (as inhalable fraction)

· 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:
    - In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
  · Protection of hands:
    - The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
    - Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- Material of gloves
  The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

- 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: Not required.

### 9 Physical and chemical properties

- Information on basic physical and chemical properties

- General Information

  - Appearance:
    - Form: Fluid
    - Color: According to product specification
    - Odor: Characteristic
    - Odor threshold: Not determined.

  - pH-value at 20 °C (68 °F): 8.3

- Change in condition

  - Melting point/Melting range: Undetermined.
  - Boiling point/Boiling range: 100 °C (212 °F)

- Flash point: Not applicable.

- Flammability (solid, gaseous): Not applicable.

- Decomposition temperature: Not determined.

- Auto igniting: Product is not selfigniting.

- Danger of explosion: Product does not present an explosion hazard.

- Explosion limits:
  - Lower: Not determined.
  - Upper: Not determined.

- Vapor pressure at 20 °C (68 °F): 23 hPa (17.3 mm Hg)

- Density at 20 °C (68 °F): 1.00377 g/cm³ (8.37646 lbs/gal)

- Relative density: Not determined.

- Vapor density: Not determined.

- Evaporation rate: Not determined.

- Solubility in / Miscibility with Water: Fully miscible.

- Partition coefficient (n-octanol/water): Not determined.

- Viscosity:
  - Dynamic: Not determined.
  - Kinematic: Not determined.
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- Solvent content:
  - Water: >90.0%
  - VOC content: 0.00%
  - Solids content: <9.0%

- Other information: No further relevant information available.

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability:
  - Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
  - Possibility of hazardous reactions: No dangerous reactions known.
  - Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

- Information on toxicological effects:
  - Acute toxicity:
    - LD/LC50 values that are relevant for classification:
      - 10043-35-3 boric acid
        - Oral LD50 2,660 mg/kg (rat)
  - 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)
      - None of the ingredients is listed.
    - NTP (National Toxicology Program)
      - None of the ingredients is listed.
    - OSHA-Ca (Occupational Safety & Health Administration)
      - None of the ingredients is listed.

12 Ecological information

- Toxicity
  - Aquatic toxicity: No further relevant information available.
  - 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.
### 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:** Disposal must be made according to official regulations.

### 14 Transport information

- **UN-Number**
  - DOT, ADN, IMDG, IATA: not regulated

- **UN proper shipping name**
  - DOT, ADN, IMDG, IATA: not regulated

- **Transport hazard class(es)**
  - DOT, ADN, IMDG, IATA: not regulated

- **Packing group**
  - DOT, IMDG, IATA: not regulated

- **Environmental hazards:**
  - Not applicable.

- **Special precautions for user**
  - Not applicable.

- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**
  - Not applicable.

- **UN "Model Regulation":**
  - not regulated

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
  - **Sara**
    - **Section 355 (extremely hazardous substances):**
      - None of the ingredients is listed.
    - **Section 313 (Specific toxic chemical listings):**
      - None of the ingredients is listed.
Safety Data Sheet
acc. to OSHA HCS

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- **TSCA (Toxic Substances Control Act):**
  All ingredients are listed.

- **Proposition 65**
  - **Chemicals known to cause cancer:**
    None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for females:**
    None of the ingredients is listed.
  - **Chemicals known to cause reproductive toxicity for males:**
    None of the ingredients is listed.
  - **Chemicals known to cause developmental toxicity:**
    None of the ingredients is listed.

- **Carcinogenic categories**

  - **EPA (Environmental Protection Agency)**
    10043-35-3 boric acid 1 (oral)

  - **TLV (Threshold Limit Value established by ACGIH)**
    10043-35-3 boric acid A4

  - **NIOSH-Ca (National Institute for Occupational Safety and Health)**
    None of the ingredients is listed.

- **GHS label elements**
  The product is classified and labeled according to the Globally Harmonized System (GHS).

- **Hazard pictograms**
  GHS08

  - **Signal word** Danger
  - **Hazard statements**
    May damage fertility or the unborn child.
  - **Precautionary statements**
    Obtain special instructions before use.
    Do not handle until all safety precautions have been read and understood.
    Wear protective gloves/protective clothing/eye protection/face protection.
    IF exposed or concerned: Get medical advice/attention.
    Store locked up.
    Dispose of contents/container in accordance with local/regional/national/international regulations.
  - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

- **Department issuing SDS:** Product safety department.
- **Contact:** Ms. BADICHI GITLIN
- **Date of preparation / last revision** 06/25/2018 / -
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
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
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
Repr. 1A: Reproductive toxicity – Category 1A