**SECTION 1: Identification**

### 1.1. GHS Product identifier

<table>
<thead>
<tr>
<th>Product form</th>
<th>Substance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trade name</td>
<td>ETİ-ZnBor (Zinc Borate)</td>
</tr>
<tr>
<td>Chemical name</td>
<td>Zinc borate hydrate, hexaboron dizinc undecaoxide, dodecaboron tetrazinc docosaioxide heptahydrate.</td>
</tr>
<tr>
<td>IUPAC name</td>
<td>hexaboron dizinc undecaoxide</td>
</tr>
<tr>
<td>Substance type</td>
<td>Mono-constituent</td>
</tr>
<tr>
<td>EC-No.</td>
<td>235-804-2</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>138265-88-0</td>
</tr>
<tr>
<td>Formula</td>
<td>2ZnO 3B2O3 3.5H2O</td>
</tr>
<tr>
<td>Product group</td>
<td>Trade product</td>
</tr>
</tbody>
</table>

### 1.2. Other means of identification

No additional information available

### 1.3. Recommended use of the chemical and restrictions on use

<table>
<thead>
<tr>
<th>Recommended uses and restrictions</th>
<th>Not restricted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recommended use</td>
<td>Flame-retardant agent</td>
</tr>
<tr>
<td></td>
<td>Industrial use resulting in manufacture of another substance (use of intermediates)</td>
</tr>
</tbody>
</table>

### 1.4. Supplier’s details

<table>
<thead>
<tr>
<th>Supplier</th>
<th>Importer</th>
</tr>
</thead>
<tbody>
<tr>
<td>ETİ MADEN İŞLETMELERİ GENEL MÜDÜRLÜĞÜ</td>
<td>ETIMINE USA, INC.</td>
</tr>
<tr>
<td>Kızılirmak Mahallesi 1443. Cadde No:5</td>
<td>411 Hackensack Ave Suite 902</td>
</tr>
<tr>
<td>Çukurambar-Çankaya Zipcode: 06530</td>
<td>Hackensack, NJ 07601 USA</td>
</tr>
<tr>
<td>Ankara – TÜRKİYE</td>
<td>Tel: +1 (201) 462-1200; Fax: +1 (201) 462-1500</td>
</tr>
<tr>
<td>Tel: +90 312 294 20 00 – Fax: +90 312 230 71 84</td>
<td><a href="mailto:etimineusa@etimineusa.com">etimineusa@etimineusa.com</a> <a href="http://www.etimineusa.com">www.etimineusa.com</a></td>
</tr>
<tr>
<td><a href="mailto:info@etimaden.gov.tr">info@etimaden.gov.tr</a></td>
<td><a href="http://www.etimaden.gov.tr">www.etimaden.gov.tr</a></td>
</tr>
</tbody>
</table>

### 1.5. Emergency phone number

CHEMTREC 1-800-262-8200/ (703) 741-5500

**SECTION 2: Hazard identification**

### 2.1. Classification of the substance or mixture

<table>
<thead>
<tr>
<th>Classification according to the United Nations GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductive toxicity, Category 2</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment — Acute Hazard, Category 1</td>
</tr>
<tr>
<td>Hazardous to the aquatic environment — Chronic Hazard, Category 2</td>
</tr>
</tbody>
</table>

Full text of H statements: see section 16

Adverse physicochemical, human health and environmental effects: Suspected of damaging the unborn child, Very toxic to aquatic life, Toxic to aquatic life with long lasting effects.

### 2.2. GHS Label elements, including precautionary statements

<table>
<thead>
<tr>
<th>Labelling according to the United Nations GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard pictograms (GHS UN)</td>
</tr>
<tr>
<td><img src="image" alt="Hazard Pictograms" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Signal word (GHS UN)</th>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazard statements (GHS UN)</td>
<td></td>
</tr>
<tr>
<td>H361d - Suspected of damaging the unborn child</td>
<td></td>
</tr>
<tr>
<td>H400 - Very toxic to aquatic life</td>
<td></td>
</tr>
<tr>
<td>H411 - Toxic to aquatic life with long lasting effects</td>
<td></td>
</tr>
</tbody>
</table>
2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

SECTION 3: Composition/information on ingredients

3.1. Substances

- Substance type: Mono-constituent
- IUPAC name: hexaboron dizinc undecaoxide
- Chemical name: Zinc borate hydrate, hexaboron dizinc undecaoxide, dodecaboron tetrazinc docosaoxide heptahydrate.

Substance identification codes: See section 1.1

<table>
<thead>
<tr>
<th>Name</th>
<th>Product identifier</th>
<th>%</th>
<th>Classification according to the United Nations GHS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodecaboron tetrazinc docosaoxide heptahydrate (Main constituent)</td>
<td>(CAS-No.) 138265-88-0</td>
<td>&gt; 98</td>
<td>Repr. 2, H361 Aquatic Acute 1, H400 Aquatic Chronic 2, H411</td>
</tr>
</tbody>
</table>

Full text of H-statements: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of necessary first-aid measures

- First-aid measures general: IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation: Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact: Wash skin with plenty of water.
- First-aid measures after eye contact: Rinse eyes with water as a precaution.
- First-aid measures after ingestion: Call a poison center or a doctor if you feel unwell.

4.2. Most important symptoms/effects, acute and delayed

No additional information available

4.3. Indication of immediate medical attention and special treatment needed, if necessary

Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media


5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire: Toxic fumes may be released.

5.3. Special protective actions for fire-fighters

Protection during firefighting: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures: Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: “Exposure controls/personal protection”.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and materials for containment and cleaning up

- For containment: Collect spillage.
- Methods for cleaning up: Mechanically recover the product. Notify authorities if product enters sewers or public waters.
- Other information: Dispose of materials or solid residues at an authorized site.
SECTION 7: Handling and storage

7.1. Precautions for safe handling
Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities
Storage conditions : Store locked up. Store in a well-ventilated place. Keep cool.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.2. Appropriate engineering controls
Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)
Hand protection : Protective gloves
Eye protection : Safety glasses
Skin and body protection : Wear suitable protective clothing
Respiratory protection : [In case of inadequate ventilation] wear respiratory protection.

SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties
Physical state : Solid
Molecular mass : 434.6 g/mol
Colour : white.
Odour : odourless.
Odour threshold : No data available
Relative evaporation rate (butylacetate=1) : No data available
Melting point : 650 °C
Freezing point : Not applicable
Boiling point : Not data available
Flammability (solid, gas) : Non flammable.
Explosive limits : Not applicable
Lower explosive limit (LEL) : Not applicable
Upper explosive limit (UEL) : Not applicable
Flash point : Non flammable

No additional information available
Zinc Borate
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according to the United Nations GHS (Rev. 7, 2017)

Auto-ignition temperature : Not applicable
Decomposition temperature : No data available
pH : 6.5 – 7.5
pH solution : 1 %
Viscosity, kinematic (calculated value) (40 °C) : No data available
Partition coefficient n-octanol/water (Log Pow) : No data available
Partition coefficient n-octanol/water (Log Kow) : Not available
Vapour pressure : Negligible @20 C
Vapour pressure at 50 °C : Not available
Density : 2.6 Type: 'other:specific gravity' Temp.: 20 °C
Relative density : Not available
Relative vapour density at 20 °C : No data available
Solubility : Water: < 0.28 @25 C
Viscosity, dynamic : No data available
Particle size : Not available
Particle size distribution : Not available
Particle shape : Not available
Particle aspect ratio : Not available
Particle specific surface area : Not available

9.2. Data relevant with regard to physical hazard classes (supplemental)
No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity
The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability
Stable under normal conditions.

10.3. Possibility of hazardous reactions
No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid
None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials
No additional information available

10.6. Hazardous decomposition products
Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

ETI-ZnBor (Zinc Borate) (138265-88-0)


LC50 inhalation rat (mg/l) 4.95 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: EU Method B.2 (Acute Toxicity (Inhalation))

Skin corrosion/irritation : Not classified
pH: 6.5 – 7.5

Serious eye damage/irritation : Not classified
pH: 6.5 – 7.5
Zinc Borate
Safety Data Sheet
according to the United Nations GHS (Rev. 7, 2017)

Respiratory or skin sensitisation: Not classified
Germ cell mutagenicity: Not classified
Carcinogenicity: Not classified
Reproductive toxicity: Suspected of damaging fertility or the unborn child.
STOT-single exposure: Not classified
STOT-repeated exposure: Not classified
Aspiration hazard: Not classified

ETİ-ZnBor (Zinc Borate) (138265-88-0)
Viscosity, kinematic
No data available

SECTION 12: Ecological information

12.1. Toxicity
Ecology - general: Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute): Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic): Toxic to aquatic life with long lasting effects.

12.2. Persistence and degradability

ETİ-ZnBor (Zinc Borate) (138265-88-0)
Persistence and degradability
No additional information available

12.3. Bioaccumulative potential

ETİ-ZnBor (Zinc Borate) (138265-88-0)
Partition coefficient n-octanol/water (Log Kow)
No data available
Bioaccumulative potential
Not bioaccumulative.

12.4. Mobility in soil

ETİ-ZnBor (Zinc Borate) (138265-88-0)
Mobility in soil
The product is slightly soluble in water and is leachable through normal soil.

12.5. Other adverse effects
Ozone: Not classified
Other adverse effects: No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods
Waste treatment methods: Dispose of contents/container in accordance with licensed collector’s sorting instructions.

SECTION 14: Transport information
In accordance with IMDG / IATA / UN RTDG

<table>
<thead>
<tr>
<th>UN RTDG</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.1. UN number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3077</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
<tr>
<td>14.2. UN Proper Shipping Name</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.</td>
<td>Not applicable</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
### 14.3. Transport hazard class(es)

| 9 | Not applicable | Not applicable |

### 14.4. Packing group

| III | Not applicable | Not applicable |

### 14.5. Environmental hazards

- Dangerous for the environment: Yes
- Dangerous for the environment: Yes
- Marine pollutant: Yes

No supplementary information available

### 14.6. Special precautions for user

- **UN RTDG**
  - Special provisions (UN RTDG): 274, 331, 335, 375
  - Limited quantities (UN RTDG): 5 kg
  - Excepted quantities (UN RTDG): E1
  - Packing instruction (UN RTDG): P002, IBC08, LP02
  - Special packing provisions (UN RTDG): PP12, B3
  - Portable tank and bulk container special instructions (UN RTDG): T1, BK2, BK3
  - Portable tank and bulk container special provisions (UN RTDG): TP33

- **IMDG**
  - No data available

- **IATA**
  - No data available

### 14.7. Transport in bulk according to IMO instruments

| IBC code | Not applicable. |

### SECTION 15: Regulatory information

#### 15.1. Safety, health and environmental regulations specific for the product in question

Regulatory reference:
- Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China)
- Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
- Listed on NZIoC (New Zealand Inventory of Chemicals)
- Listed on the AICS (Australian Inventory of Chemical Substances)
- Listed on the Canadian DSL (Domestic Substances List)
- Listed on the United States TSCA (Toxic Substances Control Act) inventory
- Listed on KECL/KECI (Korean Existing Chemicals Inventory)
- Listed on the Japanese ISHL (Industrial Safety and Health Law).

### SECTION 16: Other information

| Issue date | 05/01/2017 |
| Revision date | 03/01/2021 |

<table>
<thead>
<tr>
<th>Section</th>
<th>Changed item</th>
<th>Change</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Added</td>
<td>This SDS has been compiled in accordance with UN-GHS (Rev.6) (2015) for the first time. (May, 2017/ Rev. No: 00)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Added</td>
<td>This SDS was updated in line with “Standardization and Simplification of Bag Printings” (January, 2018/ Rev. No: 00.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Added</td>
<td>The CAS number of ETİ-ZnBor was updated to represent the hydrated composition of the product. (September, 2018/ Rev. No: 00.2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Zinc Borate
Safety Data Sheet
according to the United Nations GHS (Rev. 7, 2017)

Abbreviations and acronyms:
- CAS-No. - Chemical Abstract Service number
- ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
- ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
- ATE - Acute Toxicity Estimate
- BCF - Bioconcentration factor
- BLV - Biological limit value
- CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
- COD - Chemical oxygen demand (COD)
- DMEL - Derived Minimal Effect level
- DNEL - Derived-No Effect Level
- EC50 - Median effective concentration
- EC-No. - European Community number
- ED - Endocrine disrupting properties
- EN - European Standard
- IARC - International Agency for Research on Cancer
- IATA - International Air Transport Association
- IMDG - International Maritime Dangerous Goods
- IOELV - Indicative Occupational Exposure Limit Value
- LC50 - Median lethal concentration
- LD50 - Median lethal dose
- LOAEL - Lowest Observed Adverse Effect Level
- N.O.S. - Not Otherwise Specified
- NOAEC - No-Observed Effect Concentration
- NOAEL - No-Observed Adverse Effect Level
- OECD - Organisation for Economic Co-operation and Development
- OEL - Occupational Exposure Limit
- PBT - Persistent Bioaccumulative Toxic
- PNEC - Predicted No-Effect Concentration
- RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
- SDS - Safety Data Sheet
- STP - Sewage treatment plant
- TRGS - Technical Rules for Hazardous Substances
- TLM - Median Tolerance Limit
- VOC - Volatile Organic Compounds
- vPvB - Very Persistent and Very Bioaccumulative
- WGK - Water Hazard Class
- ThOD - Theoretical oxygen demand (ThOD)

Training advice:
- Normal use of this product shall imply use in accordance with the instructions on the packaging.

Other information:
- DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

Full text of H-statements & Precautionary statements (GHS UN):

| H361 | Suspected of damaging fertility or the unborn child |
| H400 | Very toxic to aquatic life |
| H411 | Toxic to aquatic life with long lasting effects |
| P201 | Obtain special instructions before use. |
| P202 | Do not handle until all safety precautions have been read and understood. |
| P273 | Avoid release to the environment. |
| P280 | Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/.... |
| P308+P313 | IF exposed or concerned: Get medical advice/attention. |
### Zinc Borate

**Safety Data Sheet**

according to the United Nations GHS (Rev. 7, 2017)

<table>
<thead>
<tr>
<th>No.</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>P391</td>
<td>Collect spillage.</td>
</tr>
<tr>
<td>P405</td>
<td>Store locked up.</td>
</tr>
</tbody>
</table>

**SDS UN - ETİ Maden**

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.