Boric Acid

Safety Data Sheet

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

Issue date: March 1, 2007 Revision date: October 10, 2021 : Version: 07.1

SECTION 1: Identification

1.1. GHS Product identifier

Product form	: Substance
Trade name	: ETİBORİK ASİT (Boric acid)
Chemical name	: Boric acid, orthoboric acid, boracic acid
IUPAC name	: boric acid
Substance type	: Mono-constituent
EC-No.	: 233-139-2
EC Index-No.	: 005-007-00-2
CAS-No.	: 10043-35-3
Formula	: H3BO3
Product group	: Trade product

1.2. Other means of identification

No additional information available

1.3. Recommended use of the chemical and restrictions on use

Recommended use : Ceramic, Detergent, Borosilicate glass, Fiberglass

1.4. Supplier's details

Supplier	Importer
ETİ MADEN İŞLETMELERİ GENEL MÜDÜRLÜĞÜ Kızılırmak Mahallesi 1443. Cadde No:5 Çukurambar-Çankaya Zipcode: 06530 Ankara – TÜRKİYE Tel: +90 312 294 20 00 – Fax: +90 312 230 71 84 info@etimaden.gov.tr www.etimaden.gov.tr	ETIMINE USA, INC. 411 Hackensack Ave Suite 902 Hackensack, NJ 07601 USA Tel: +1 (201) 462-1200; Fax: +1 (201) 462-1500 etimineusa@etimineusa.com www.etimineusa.com

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

Classification according to the United Nations GHS

Acute toxicity (oral), Category 5 H303

Reproductive toxicity, Category 2 H361d

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects : Suspected of damaging the unborn child,Harmful if swallowed.

2.2. GHS Label elements, including precautionary statements

Labelling according to the United Nations GHS

Hazard pictograms (GHS UN) :

Signal word (GHS UN) : Warning

Hazard statements (GHS UN) : H303 - May be harmful if swallowed
H361d - Suspected of damaging the unborn child

Precautionary statements (GHS UN) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/....
P301+P312 - IF SWALLOWED: Call a POISON CENTER/doctor/ ... if you feel unwell.
P308+P313 - IF exposed or concerned: Get medical advice/attention.
P405 - Store locked up.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the : Dispose of contents/container to hazardous or special waste collection point, in accordance

classification | with local, regional, national and/or international regulation.

SECTION 3: Composition/information on ingredients

3.1. Substances

Substance type : Mono-constituent
IUPAC name : boric acid
Chemical name : Boric acid, orthoboric acid, boracic acid
Substance identification codes: See section 1.1

Name	Product identifier	%	Classification according to the United Nations GHS
Boric Acid (Main constituent)	(CAS-No.) 10043-35-3	> 99.9	Acute Tox. 5 (Oral), H303 Repr. 2, H361

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. Call a poison center or a doctor if you feel unwell.

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 : Rinse mouth. 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

Suitable extinguishing media : Water spray. Dry powder. Foam.

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

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

ETİBORİK ASİT (Boric acid) (10043-35-3)	
DNEL/DMEL (Workers)	
Long-term - systemic effects, dermal	392 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	8.3 mg/m³
DNEL/DMEL (General population)	
Acute - systemic effects, oral	0.98 mg/kg bodyweight/day
Long-term - systemic effects,oral	0.98 mg/kg bodyweight/day
Long-term - systemic effects, inhalation	4.15 mg/m³
Long-term - systemic effects, dermal	196 mg/kg bodyweight/day
PNEC (Water)	
PNEC aqua (freshwater)	2.9 mg/l
PNEC aqua (marine water)	2.9 mg/l
PNEC aqua (intermittent, freshwater)	13.7 mg/l
PNEC (Soil)	
PNEC soil	5.7 mg/kg dwt
PNEC (STP)	
PNEC sewage treatment plant	10 mg/l

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.

Personal protective equipment symbol(s)

8.4. Exposure limit values for the other components

No additional information available

SECTION 9: Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state : Solid

Molecular mass : 61.83 g/mol

Colour : white.

Odour : odourless.

Odour threshold : Not available

Melting point : 450 °C

Freezing point : 450 °C Not applicable

Boiling point : 1860

Flammability (solid, gas) : Not applicable

Explosive limits : Not applicable

Lower explosive limit (LEL) : Not applicable

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Upper explosive limit (UEL)	:	Not applicable
Flash point	:	Non flammable
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	300 °C 169 to HBO2-1 ½ H2O
pH	:	5.13 1.0 % solution
pH solution	:	Not available
Viscosity, kinematic (calculated value) (40 °C)	:	Not applicable
Partition coefficient n-octanol/water (Log Kow)	:	Not available
Vapour pressure	:	Negligible @20 C
Vapour pressure at 50 °C	:	Not available
Density	:	1489 kg/m³ Type: 'density' Temp.: 23 °C
Relative density	:	1.49 Type: 'relative density' Temp.: 23 °C
Relative vapour density at 20 °C	:	Not applicable
Solubility	:	Water: 4.94 – 37.9 (1.0 % solution) @ 20 C - (1.0 % solution) @ 100 C
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) : May be harmful if swallowed.

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

ETİBORİK ASİT (Boric acid) (10043-35-3)	
LD50 oral rat	> 2600 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Guideline: EU Method B.1 (Acute Toxicity (Oral))
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit, Guideline: other:FIFRA (40 CFR 163)
LC50 inhalation rat (mg/l)	> 2.12 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: other:USEPA FIFRA 40 CFR Part 160

Skin corrosion/irritation	:	Not classified pH: 5.13 1.0 % solution
Serious eye damage/irritation	:	Not classified pH: 5.13 1.0 % solution
Respiratory or skin sensitisation	:	Not classified
Germ cell mutagenicity	:	Not classified

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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

ETİBORİK ASİT (Boric acid) (10043-35-3)	
Viscosity, kinematic	Not applicable

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified

ETİBORİK ASİT (Boric acid) (10043-35-3)	
LC50 - Fish [1]	79.7 mg/l Test organisms (species): Pimephales promelas
LC50 - Fish [2]	74 mg/l Test organisms (species): Limanda limanda
EC50 72h - Algae [1]	66 mg/l Test organisms (species): Phaeodactylum tricornutum
EC50 72h - Algae [2]	54 mg/l Test organisms (species): Phaeodactylum tricornutum
NOEC chronic fish	6.4 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio) Duration: '34 d'

12.2. Persistence and degradability

ETİBORİK ASİT (Boric acid) (10043-35-3)	
Persistence and degradability	Boron is naturally occuring and ubiquitous in the environment. Boric acid decomposes in the environmen to natural borate.

12.3. Bioaccumulative potential

ETİBORİK ASİT (Boric acid) (10043-35-3)	
Bioaccumulative potential	Not bioaccumulative.

12.4. Mobility in soil

ETİBORİK ASİT (Boric acid) (10043-35-3)	
Mobility in soil	The product is 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

UN RTDG	IMDG	IATA
14.1. UN number		
Not regulated for transport		

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14.2. UN Proper Shipping Name		
Not applicable	Not applicable	Not applicable
14.3. Transport hazard class(es)		
Not applicable	Not applicable	Not applicable
Not applicable	Not applicable	Not applicable
14.4. Packing group		
Not applicable	Not applicable	Not applicable
14.5. Environmental hazards		
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No
No supplementary information available		

14.6. Special precautions for user

- UN RTDG
No data available
- IMDG
No data available
- IATA
No data available

14.7. Transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

Regulatory reference : Listed on ELINCS (European List of Notified Chemical Substances)
Listed on KECL/KECI (Korean Existing Chemicals Inventory)
Listed on NZIoC (New Zealand Inventory of Chemicals)
Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances)
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 IECSC (Inventory of Existing Chemical Substances Produced or Imported in China).

SECTION 16: Other information

Issue date : 03/01/2007
Revision date : 03/04/2021

Indication of changes:
Added.

Section	Changed item	Change	Comments
		Added	This SDS was updated in accordance with the GHS (Rev.6) (2015)-Guidance on the Compilation of Safety data Sheets. This SDS was updated in line with “Eti Maden Corporate Identity”(January,2016)
		Modified	This SDS was updated in accordance with the IMO resolution MSC.393(95).(January, 2017)
		Added	This SDS was updated in line with “Standardization and Simplification of Bag Printings” (January, 2018)
		Added	This SDS was updated to include K-REACH Registration number.(February, 2019)

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Abbreviations and acronyms	:	CAS-No. - Chemical Abstract Service number ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways ATE - Acute Toxicity Estimate ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road BCF - Bioconcentration factor BLV - Biological limit value BOD - Biochemical oxygen demand (BOD) 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 Adverse Effect Concentration NOAEL - No-Observed Adverse Effect Level NOEC - No-Observed Effect Concentration OECD - Organisation for Economic Co-operation and Development OEL - Occupational Exposure Limit PBT - Persistent Bioaccumulative Toxic PNEC - Predicted No-Effect Concentration REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006 RID - Regulations concerning the International Carriage of Dangerous Goods by Rail SDS - Safety Data Sheet STP - Sewage treatment plant ThOD - Theoretical oxygen demand (ThOD) TLM - Median Tolerance Limit TRGS - Technical Rules for Hazardous Substances VOC - Volatile Organic Compounds vPvB - Very Persistent and Very Bioaccumulative WGK - Water Hazard Class
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):	
H303	May be harmful if swallowed
H361	Suspected of damaging fertility or the unborn child
P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/....
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/... if you feel unwell.
P308+P313	IF exposed or concerned: Get medical advice/attention.

P405	Store locked up.

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.

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