ETİ MADEN İŞLETMELERİ GENEL MÜDÜRLÜĞÜ

It has been prepared in compliance with Regulation on Preparation and Distribution of Health and Safety Data Sheet Pertaining to Hazardous Substances and Preparations (December 26, 2008 and No.27092)

ETİ MATİK BORON CLEANING PRODUCT

Material Safety Data Sheet

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1.Identification of Substance / Preparation and Company/Work Owner

1.1. /Identification of Substance / Preparation

Product Name : Eti Matik Boron Cleaning Product
Formula : Mixture

1.2./Use of the Preparation

Fields of Use: Used as an additional agent to ease removing stains, as bleaching and water softening during washing white and colorful laundry in hand wash, roll mill machines, full automatic and industrial machines.

1.3. Description of the Company/Work Owner

Producer : Eti Maden Works General Management
Address : Ayvalı Mah. Halil Sezai Erkut Cad. Afra Sok. No.1/A 06010 Keçiören Ankara/TURKEY
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1.4. Emergency Call

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2. Compound/Content

CAS- No	**EINECS**	**Substance**	**Concentration (%) (*)**
1303-96-4	215-540-4	Sodium tetraboratedecahydrate	50 (min)
822-16-2	212-490-5	Sodium stearate	10-30
497-19-8	207-838-8	Sodium carbonate	25 (max)
15630-89-4	239-707-6	Sodium percarbonate	25 (max)
10486-00-7	239-172-9	Sodium perborate	
10555-76-7	231-891-6	Sodiummetaborate	25 (max)
1318-02-1	215-283-8	Zeolite	≤ 5
		Other (enzyme, perfume etc)	≤ 1

This product contains over 50% of *Sodiumtetraboratedecahydrate* ($Na_2B_4O_7 \cdot 10H_2O$) Chemical synonym is ‘Borax’ and classified in ‘Inorganic Borates” family which is one of the nature’s oxidized forms.

Active substance of the preparation and weighted concentration is Borax, therefore primarily the national and international reference information of Borax was considered when producing the Safety Data Sheet. Information for other chemicals contained in the preparation is presented in Part 8 and 11.

There are several documented information in United States and European Union sources demonstrating that <u>long term and high dose of Borax use in-experimental animals</u> could be hazardous. However, such experiments were performed by administrating pure Borax orally and if <u>Eti Matik Boron Cleaning Product is used with recommended way and dose, these type of detrimental effects are not expected.</u>

Other various effects that may be experienced in regular use are specified in detail in the Part 3 and Part 11. Detailed information of National and International regulations is specified in Part 15.

(*) % rates of concentration in the product may vary provided that it stands within min-max limits.

3. Description of Hazards

3.1. Physical/Chemical hazard

Eti Matik Boron Cleaning Product is white, aromatic and powdery; and does not have flammable or explosive character.

3.2. Potential effects on human health:

Exposure:

The most significant exposure is inhaling the powder of the product in occupational, industrial and daily use. Eti Matik Boron Cleaning product is not absorbed by a healthy and unscathed skin, therefore it does not result in any hazard through healthy skin.

Inhalation

Eti Matik Boron Cleaning product powder can cause a moderate irritation in throat and nose if a high dose of this cleaning product is inhaled. The volume should be over 15mg/m^3 in the ambient air to allow borates to cause this effect[1].

Eye contact

Eti Matik Boron Cleaning product does not have any effect on the eyes when used in normal-recommended conditions. If the powders contact the eyes, it causes irritation.

Skin contact

Eti Matik Boron Cleaning product does not cause irritation healthy and non-wound skin. If one is exposed high dose through a wounded and non-intact skin area, a systematic effect does not occur but swelling, reddening and rash in the local skin area may be observed.

Ingestion

Eti Matik Boron Cleaning product powder must not be ingested. If an adult accidentally ingests a small amount (one tea spoon) of powder, no effect is expected to occur. Higher dose of ingestion can result in acute toxic symptoms such as nausea, vomit and diarrhea.

Cancer

There is no information that Eti Matik Boron Cleaning Product and Borax is carcinogenic.

Effects on fertility and development

Detrimental effects on fertility and development were identified in animal experiments that were performed by <u>orally administrating long-term and high dose of borax</u> in different centers. However, it is not expected such effects to occur if Eti Matik Boron Cleaning Product is used on recommended method of use and dose. In current scientific studies performed on the people who live in the surrounding area of, and work at, Boron mine, it has been demonstrated that borate powder had no effects on fertility and development health.[2]. Detailed information is provided in Part 11.

Target organ effect – accumulation
No target organ effect or accumulation of borates is reported by studies conducted on human being. Primarily, accumulation in testicles was identified in animal experiments performed by orally administrating long-term and high dose of derivatives of Borate[3]. See Part 4 and 11 for detailed information.

3.3. Potential environmental effects:

If a very high amount of pure Eti Matik Boron Cleaning Product leaks in the nature, it may have detrimental effect on the plants and other species. Therefore, uncontrolled spread on the nature should be reduced as much as possible.

4. First Aid Measures

4.1. Inhalation

If one is exposed to a high dose of Eti Matik Boron Cleaning product, symptoms of irritation (breathing difficulties, dry and intensive cough attacks, burning sensation at nose and throat etc.) may be experienced. In this case, remove the person from the environment to open and clean air. If coughing and breathing difficulties persist, seek for medical assistant.

4.2. Eye contact

Use eye cleaning solution or clean tap water to clean the eyes. If the burning – stinging pain – lacrimation persists longer than 30 minutes despite applying water, seek for medical attention.

4.3. Skin contact

Avoid long-term hand contact with the product to protect your skin. Since no irritation will occur on intact skin, first aid precaution is not required. In case of long-term exposure by wounded or non-intact skin, wash this skin area under running clean water for at least 3 minutes. Do not rub your skin during this process.

4.4. Ingestion

If an adult accidentally swallows a larger amount than one tea spoon, have this person drink two glasses of water, then consult a physician. Do not force the person to vomit as this will result in further severe problems in esophagus and trachea. Since toxic dose by ingesting is less in children, in case of doubt of ingestion seek for medical assistance regardless of ingested amount.

Additional information for physicians: If your patient has ingested Eti Matik Boron Cleaning Product (approximately 6-12 g of product powder) equivalent to 4-8 g of pure borax, clinical monitoring is required. In case of a history of ingesting a lower dose in adults, ambulatory follow up will be sufficient. If a higher dose is ingested, intravenous fluid replacement should be initiated and kidney function tests, detoxication follow up and fluid-electrolyte follow up must be performed. Gastric lavage is only recommended in symptomatic cases. If a high amount is ingested or renal failure is present, hemo-dialysis can be an option. Urine or blood boron-borax analysis and follow-up can only be performed to indicate the presence of exposure. However, urine analysis and measuring blood borax values will not be useful to understand the extent of intoxication and effectiveness of treatment[4]. See Part 11 for detailed information.

5. Fire-Fighting Precautions

Eti Matik Boron Cleaning Product is not a combustible, inflammable or explosive substance. In contrast, Borax substance has a flame retardant character. However, the product package is burnable and can be extinguished by any fire extinguisher.

Inflammability classification (29 CFR 1910.1200): Non-inflammable powder.

6. Accidental Release Measures

General: Eti Matik Boron Cleaning Product is a water-soluble white powder, and if a high amount of this product is mixed in the soil, it will be absorbed by immediate surrounding tree and plant roots, therefore it can damage the vegetation cover. For detailed ecological information, see Part 12.

Land Spill: If a very high amount of Eti Matik Boron Cleaning Product is dispersed on the land, it is picked up from the surface by industrial vacuum device, shovels and sweepers, and transferred to a special non-permeable cans. Picked detergents must be disposed of in accordance with local rules and regulations. Care should be taken to avoid contamination during picking up and cleaning the detergent on the surface. No protective clothing or equipment is required to use for the surface cleaning.

Dropping in water: If possible, first remove the safe – non-torn parcels and packages from the water. Inform the local authorities in charge of water and ensure that the necessary precautions are taken in order to prevent using such water for drinking and irrigating purposes. It is important that these precautions continue until the borax in the water drops to normal levels. For detailed information see Part 12-13 and 15.

Borax, primary active substance of Eti Matik Boron Cleaning Product, is considered in the class of “non-hazardous waste” if it is dispersed or spread to the environment according to *the Directive on Resource Conservation and Recovery Act (RCRA) – USA.* For detailed information, see Part 15.

7. Handling and Storage

7.1. Handling
No specific handling measures are required.

7.2. Storage
Keep Eti Matik Boron Cleaning Product away from wet and humid environments. Maintain it at room temperature. Use the principle “first in – first out” during storage to protect the package integrity and minimize the hardening of the product.

7.3. Special Use
Keep away from children. Do not use for hand, face and food product cleaning.

8. Exposure Controls / Personal Protection

8.1. Exposure limit value

Boron is present as oxidized in the nature and this form is termed as Borate. There is no consensus on the toxic levels of borate derivatives (boric acid, borax, boron oxide) on human and other species, and safety use and exposure limit values in the international scientific literature and in the regulations published by regulatory authorities. Limit values published by these regulatory authorities vary by years.

Therefore, information of different references is provided below about exposure limit values of Borax, which is contained in the Eti Matik Boron Cleaning Product at the highest concentration. The most recent and approved data was published by *Agency for Toxic Substances and Disease Registry (ATSDR)-USA* in November 2010[1].

Sodium Stearate, Sodium Carbonate, ***Sodium Percarbonate, Sodium Perborate, Sodium Metaborate*** and ***Zeolite*** substances, which are included in Eti Matik Boron Cleaning Product preparation, are classified in accordance with the Regulations (EC) No. 1272/2008 and the Directive 67/548/EEC. No occupational exposure limit is specified for ***Sodium Stearate, Sodium Carbonate***, ***Sodium Perborate***, ***Sodium Metaborate*** and ***Zeolite***.

Occupational Exposure limits:

Borax

ATSDR-USA/(PEL) (total volume in ambient air: 15 mg/m3

OSHA-USA/(PEL) (total volume in ambient air): 15 mg/m3

OSHA-USA/(PEL) (inhaled air): 5 mg/m3

ACGIH/(TLV): 2 mg/m3

Sodium Percarbonate

ACGIH/(TLV) (total volume in ambient air): 10 mg/m3

ACGIH/(TLV) (inhaled air): 3 mg/m3

8.2. Exposure controls

8.2.1. Occupational exposure controlling

Air purifier systems in accordance with NIOSH and CEN standards should be used to keep the preparation values in inhaled air and production and storage sites of Eti Matik Boron Cleaning Product under the above specified limits. If the chemical values of inhaled air are greater than these limits, it would be useful for the employees to use active filtered and certified masks. (N95 or P1-EN 143 type dust masks). Protective glasses and gloves should be used during the industrial manufacturing process. In the recommended daily use, this type of precaution is not required.

8.2.1.1 Protection of Respiratory System

The environment should be ventilated and dust masks should be used during industrial manufacturing process. In recommended daily use, this type of precaution is not required.

8.2.1.2. Hand Protection

PVC, rubber or neoprene protective gloves should be used during industrial manufacturing process. In the recommended daily use, this type of precaution is not required.

8.2.1.3. Eye Protection

Protective glasses should be used during industrial manufacturing process and eye wash solution should be available for emergency cases. In the recommended daily use, this type of precaution is not required.

8.2.1.4. Skin Protection

For protecting the body during the normal industrial manufacturing process, work clothes should be used and body showers should be available for emergency cases. In the recommended daily use, this type of precaution is not required.

8.2.2. Environmental Exposure Controls

No specific precaution is required.
For detailed information, see Part 3, Part 6 and Part12.

9. Physical and Chemical Properties

9.1. General Information

Appearance: Fluid, white powder-granule, colored, beaded
Odor: Odorous

9.2. Important Information on Health, Safety and Environment

pH, 30°C	9,1 (1% solution)
Boiling point/Boiling Range	No data
Flash Point	Not applicable
Deflagration heat	Not applicable
Explosive character	Not applicable
Oxidation character	Not applicable
Steam Density	Negligible @ 20°C
Relative Density	No data
Solubility (in water)	% 4,7 (20°C), %65,6 (100°C)
Distribution Factor (n-octant/water)	No data
Liquidity (Viscosity)	Not applicable
Steam Density	Not applicable
Evaporation rate	Not applicable
Density	0,98 g/ml

10. Stability and Reactivity

Eti Matik Boron Cleaning Product is a stable material. However, if it is heated so as to reduce the water ratio in its formula, its chemical structure will change.

10.1. Conditions to avoid

There is no known case to be avoided.

10.2. Incompatible materials to avoid
If it is reacted with very strong dissolvent chemicals such as metal hydride or alkaline, hydrogen gas is generated.

10.3. Hazardous degradation/decomposition products
There are no known hazardous degradation decomposition products.

11. Toxicology

Acute Toxicity

Borax (*)

Digestive System: Acute oral toxic effect is low.
Oral intake LD_{50} value in respect to the body weight in rats: 4.500-6.000 mg/kg

Skin: Acute dermal toxic effect is low. Borax absorption by healthy and non-intact skin is very low. It has no allergenic effect on the normal skin. Dermal LD_{50} value in respect to the body weight in rats: 2.000-10.000 mg/kg

Inhalation: Acute respiratory toxic effect is low. Respiratory LD_{50} value in rats: 2 mg/Lt

Eyes: Borates caused eye irritation in *Draize* tests performed on rabbits. In studies conducted on human who were exposed to occupational borax in normal air limits, it was indicated that there would be no effect on eyes if the necessary precautions are taken.

(*) The above mentioned numerical values are extracted from different scientific studies and references, and lower and upper values in literature are provided together.[5,6].

Other

Reproductive System and Developmental Toxicity Effect: An experimental study performed in 1972 on rats, mice and dogs that were fed by compounds of Borate demonstrated several effects on testicles.[3] Two different experimental studies conducted on rats, mouse and rabbits in 1991 and 1995 using a <u>very high dose</u> of boric acid indicated weight loss in fetus and changes in the skeleton system[7,8].

However, the volume of types of Borate used in such experimental studies is a toxic and poisonous dose in excess of a dose being exposed in daily life, and the exposure methods are only experimental applications and therefore it is not possible to be exposed to such amount in daily life[9].

Carcinogenicity / Mutagenicity: As shown by a variety of studies conducted with experimental animals and in the international reference documents, borates do not have carcinogenic and mutagenic effect[1,10].

Human Studies: Although several effects were identified on testicles in experimental animal studies in 1972, a series of current studies including genetic DNA analysis (COMMET Assay) on sperm from boron mine workers suggested that no significant change was present on the ability of fertility of workers who were intensively exposed to boron mineral[11].

Other epidemiological studies conducted human subjects showed that there was no increase in respiratory system diseases associated with industrial use of boron.

Another epidemiological study indicated that in normal industrial conditions and daily use borates did not have any adverse effects on fertility[2].

There is no sufficient data in the literature and directives concerning acute or chronic toxic effects of ***Sodium Stearate*** and ***Sodium Metaborate*** substances contained in the Eti Matik Boron Cleaning Product preparation.

Sodium Carbonate:
Acute Toxicity
LD50 Oral (rats): 4.090 mg/kg
If LC50 inhaled (rats): 5.750 mg/l (2 hours)

Sodium Percarbonate
Acute Toxicity
LD50 Oral (rats) 1034mg/kg LC50
Inhalation (rats) >4,58 mg/L LD50
Skin (rabbit) >2000mg/kg

Sodium Perborate
Acute Toxicity
LDLO Oral (Baby): 400 mg/kg
LDLO Oral (Children): 250 mg/kg
LD50 Oral (rat): 1.200 mg/kg LD50
Dermal (rat): > 2.000 mg/kg

Zeolite
Acute Toxicity
LD50 Oral (rat) > 10.000 mg/kg
LD50 Dermal (rabbit) > 2.000 mg/kg

None of the chemicals contained in the preparation has carcinogen/mutagen effect.

12. Ecological Information

12.1. Eco-toxicity

Borax, which is contained in the Eti Matik Boron Cleaning Product at the highest concentration, is one of the oxide forms (borates) in the nature, and the literature mostly have studies for eco-toxic effects of boron mineral.

Boron mineral is naturally found in the sea water, fresh water and soil. While the concentration in sea water is approximately 5 mg B/L, this rate in fresh water is lower than 1 mg B/L. Rate is recommended to be lower than 0.5 mg/L in drinking water[12]. Soil concentration vary between 10 and 300 mg B/L. Boron amount in sedimentary rock and soil is higher as compared to the magmatic rocks. Boron is an essential micronutrient for healthy growth of the plants, and an amount of 2.3 mg B/kg is added to the soil used for agriculture production.

It is also indicated that boron mineral is essential for life of fish and frogs. However, sensitive plants in particular can be harmed by boron in high concentrations. Therefore, it is very important to minimize borate emission in the nature.

12.1.1. Eco-toxicity in Aquatic Organisms: According to data obtained from the studies on moss, invertebrates and fish, borax, the active substance of Eti Matik Boron Cleaning Product, is not classified as “Environmentally hazardous substances”.

Algal Toxicity[13]:
Green Algae (*Selenastrumcapricornutum)*
72 hours of EC_{50} (biomass) = 40 mg B/L (minimum value)
72 hours of NOEC (according to growth follow up) = 17.5 mg B/L (minimum value)

Toxicity on Aquatic Invertebrates[14]:
Daphnid (*Daphnia magna* (Straus))
48 hours of EC_{50} = 133 mg B/L (min value)
21 days of NOEC = 6 mg B/L (min. chronic value)
21days of NOEC = 10.5 mg B/L (geometrical average, 6 tests)

Larval midge (*Chironomusriparius)*
28 days ofNOEC = 180 mg B/L (max. residue)

Respiratory Inhibition in Contaminated Sludge[15]
LC_{50} = 175 mg B/L (standard test of 3 hours)

Toxicity on Fish[14,16]:
Sea fish:
Dab (*in harbor)*
96 hours of LC_{50} = 74 mg B/L

Fresh water fish:
Flannelmouth sucker (*Catostomaslatipinnis)*
96 hours of LC_{50} = 125 mg B/L

Zebrafish (*Brachydaniorerio)*
34 days of NOEC = 5.6 mg B/L (min value)

12.1.2. Eco-toxicity for Land Species:

Toxicity on plants: In short period tests based on follow up shoot lengths at 12 different plant species; 7-10 days of IC_{50} values were 452 - 1603 mg B/kg (as dried soil weight) [17]. The most sensitive value in long period plant studies was determined in bean species named *Phaseolus vulgaris* and NOEC = 1.6 mg B/kg (soil) was found[18]. In addition, it was also determined that nearly half quantity of the tested plants were harmed if the boron concentration fell under 2 mg B/kg due to the micronutrient within the soil.

Invertebrate Toxicity[19, 20]:
Earthworm (*Eiseniaandrei)*
56-63 days of NOEC = 54 mg B/kg (dry soil) (geometric average of 4 tests)

Collembolan (*Folsomia candida &Onychiriusfolsomi)*
35 days of NOEC = 31-37 mg B/kg (dry soil)

12.2. Mobility

Borax, the primary concentration of Eti Matik Boron Cleaning Product, is water soluble but not strongly absorbed by soil. (Log Pow = -0.757 at 25° C). Therefore, it should be considered that borates can be filtered through soil.

According to the *Directive on Resource Conservation and Recovery Act (RCRA) – USA*, it is classified as "non-hazardous waste" (*40 CFR 261*) if it is spilled or spread in the environment.

Other physical-chemical properties are provided in Part 9.

12.3. Retention and biodegradability

Borax is an inorganic substance and is not biodegradable. Borates degrade to un-dissolved boric acid under environmental conditions.

12.4. Bioaccumulation potential

According to the laboratory studies and field data, borates do not have bioaccumulation potential or are not transferred in the food chain.

12.5. Other adverse effects

Eti Matik Boron Cleaning Product is not produced with ozone reducing substances; there is no ozone reducing Class 1 and Class II substances in its chemical composition.

13. Disposal Considerations

Small amounts of Eti Matik Boron Cleaning Product can be disposed of in storage areas. There is no specific disposing method to be used for this purpose; it should be taken action in accordance with the official regulations local administrative authorities' guidance. The product's accumulation amount should be appropriate for intended use.

There is <u>no specific warning</u> related to disposing of Borax substance in any part of the *Resource Conservation and Recovery Act –RCRA – United States.*

14. Transportation

Eti Matik Boron Cleaning Product does not have a UN number and there is no specific regulation for Eti Matik Boron Cleaning Product and/or its primary substance borax included in international regulations which organize international railways (RID), road transport (ADR), intra-continental seaways (ADNR), sea ways (IMDG) and airways (ICAO-TI / IATA-DGR) regulations.

UN number :no regulations
UN class: no regulations
Shipping name in the system: no regulations
Packaging group: no regulations
Sea contaminating substance:no regulations.

15. Regulatory Information

General
Borax is the chemical active ingredient contained in the Eti Matik Boron Cleaning Product at the highest concentration and there are many scientific national and international studies in the literature about boron mineral and borates. However, there is no consensus on what Boron derivate starts to show hazardous effects on human beings-animals and environment at what dose.

International legislations concerning Borax do not have any prohibitions or restrictions on sales, use, area of use and amount of Borax in order to ensure environmental or human protection.

Detailed information about international legislations on Eti Matik Boron Cleaning Product and its primary active ingredient Borax is provided below in details.

European Union: It is stated in the EU-98/8/EC Directive that more than 600 chemical substances including boron mineral, which are used in regular industry, can be harmful for human and environmental health as a result of tests performed by European Chemicals Agency in 2011. In addition it is stated that boron could be harmful for human and environmental health in the "Scientific Opinion" published in 2010 by European Union Scientific Committee, which was about "Boron Compounds"[21].

However, boron mineral has many chemical variations and usage area such as "*natural borate, refined borate, special boron chemicals, primary boron chemicals, boron compounds, special boron products*", and <u>there is no clear scientific data in the directive of European Union concerning these substances stating what kind of harm of these substances have in what doses and in what periods.</u>

United States:
OSHA/Cal OSHA: This Material Safety Data Sheet has been produced in accordance with OSHA (29 CFR 1910.1200) as well as Cal OSHA (Title 8 CCR 5194-g) standards, and is presented in Part 8 of "Occupational exposure limits" published in 2010 by *Agency for Toxic Substances and Disease Registry (ATSDR)-USA*[1]. At time of preparing this sheet, examples of Product Safety Data Sheets of similar preparations which were introduced to the market in accordance with OSHA/Cal OSHA standards that involve Borax with[22] 99% were used.

EPA (US Environmental Protection Agency): *Sodium tetraboratedecahydrate* (Borax) is not included in the documents of CERCLA (*Comprehensive Environmental Response, Compensation, and Liability Act*) published by EPA.

Chemical Inventory List: *Sodium tetraboratedecahydrate* (Borax) [CAS No: 1303-96-4],which is the active ingredient of Eti Matik Boron Cleaning Product, is included in different chemical inventory lists in the "inorganic salts" category.

- U.S. EPA TSCA: 1303-96-4
- Canadian DSL: 1303-96-4
- European EINECS: 215-540-4
- Japanese MITI: 1-69
- Australian List: 9212-848
- Korean List: 9212-848

Resource Conservation and Recovery Act (RCRA)*:* In none of the parts of RCRA documents and respective Directive, (40 CFR 261 *et seq) Sodiumtetraboratedecahydrate* (Borax) is classified as hazardous waste.

Safe Drinking Water Act-SDWA*:* The Boron amount required in safe drinking water vary according to different states and different local regulations. However, *Sodium tetraboratedecahydrate* (Borax) is not included in SDWA regulations (42 USC 300g-1, 40 CFR 141).

Clean Air Act (Montreal Protocol)
Eti Matik Boron Cleaning Product is not produced with ozone reducing substances and it does not contain Class 1 and Class II substances in its chemical compound.

IARC *(The International Agency for Research on Cancer):* This institution is a subsidiary of World Health Organization and has not issued any list or category specifying that *Sodium tetraboratedecahydrate* (Borax) is carcinogenic.

Federal Food, Drug and Cosmetic Act (FDA): According to Articles 21 CFR 175.105, 176.180 and 181.30, Borax's packaging materials, their usage in adhesive compounds, production of these materials' papering and usage of the packaging materials which contact with dry food is approved by FDA.

Ministry of Health (Republic of Turkey): Eti Matik Boron Cleaning Product notification registration was approved on 11.10.2013 with no. DET/276 by Turkish Public Health Institution pursuant to the Notification of "Detergents and Surface Active Substances" used in Detergents".

Hazard Description and Information on the Product Label
* Do not ingested
* Eye irritant
* Ingestion can result in fertility-development disorder or birth defects according to animal experiments,
* Keep away from food and nutrients
* It cannot be used as food additive, food cleaner or pesticide
* Read the Material Safety Data Sheet
* Keep away from children's reach

For further detail, contact address:
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16. Other

16.1. Disclaimer
This "Material Safety Data Sheet" is based on national and international current scientific data in the literature, documents of products containing similar chemicals, and national-international regulations. Accuracy, reliability and completeness of information in the sheet are limited to the guarantee of related source or regulations, and manufacturer does not provide a separate guarantee.

The producer may not be legally held responsible for any financial-emotional / physical-environmental damage that may arise from handling, storing, using or disposing of this product in breach of the instructions on product package or label, or information contained in this Safety Data Sheet.

If the product is used for different and specific purposes other than its intended use set out in the Safety Data Sheet, the user shall be responsible for controlling conformity of information contained in this Safety Data Sheet.

This Material Safety Data Sheet is exclusively produced for this product and must only be used for this product. If this product is used as another product compound, the information on this Sheet may not apply.

16.2. References

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22- Borax DecahydrateMSDS (Material Safety Data Sheet), 2000. U.S. Borax Inc., 14486 Borax Road, Boron, CA 93516-2000, USA.
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16.3. Updated Information:
All information contained in the first Material Safety Data Sheet prepared for EtiMatik Boron Detergent in September 2013 has been updated based on the new data in national and international scientific literature, other documents of products containing similar chemicals, and national and international directives.

16.4. Abbreviations (alphabetical order)
ACGIH : American Conference of Governmental Industrial Hygienists
ATSDR: Agency for Toxic Substances and Disease Registry - USA
Canadian DSL : Canadian Domestic Substances List
CAS No: Chemical Abstracts Service number
CEN: ComiteEuropeen de Normalisation
EINEC N° :EINECS Number : European Inventory of Existing Commercial Substances
EPA: US Environmental Protection Agency
FDA: Federal Food, Drug and Cosmetic Act
IARC: The International Agency for Research on Cancer
Japanese MITI: The Ministry of International Trade and Industry, Government of Japan
LDLO: Lethal Dose Low
NIOSH : The National Institute for Occupational Safety and Health
NOEC: No Observed Effect Level
OSHA: Occupational Safety & Health Administration – USA
PEL : Permissible Exposure Limits
RCRA: Resource Conservation and Recovery Act - USA
SDWA: Safe Drinking Water Act
TLV : Threshold Limit Value
TSCA: Toxic Substances Control Act
UN : United Nations