



Safety Data Sheet

1. Identification of the substance/mixture and of the company/undertaking

Product identifier:

Product name: Boric acid

SDS No. : 0952E-4

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Safety Management Dept. of Chemicals

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification

GHS classification and label elements of the product**Classification of the substance or mixture****HEALTH HAZARDS**

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Reproductive toxicity: Category 1B

Specific target organ toxicity – single exposure: Category 1 (gastrointestinal tract; CNS)

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Signal word: Danger

HAZARD STATEMENT

Causes skin irritation

Causes serious eye irritation

May damage fertility or the unborn child

Causes damage to organs after single exposure (gastrointestinal tract; CNS)

May cause respiratory irritation

PRECAUTIONARY STATEMENT**Prevention**

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

Wear eye protection/face protection.

Do not eat, drink or smoke when using this product.

Response

IF exposed or concerned: Get medical advice/attention.

Call a POISON CENTER or doctor/physician if you feel unwell.

IF exposed or concerned: Call a POISON CENTER or doctor/physician.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF ON SKIN: Wash with plenty of soap and water.



If skin irritation occurs: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Disposal

Dispose of contents/container in accordance with local/national regulation.

3. Composition/information on ingredients**Mixture/Substance selection:****Substance**

Ingredient name: Boric acid

Content (%): 99(min)

Chemical formula: H₃BO₃

Chemicals No, Japan: 1-63

CAS No.: 10043-35-3

MW: 61.83

ECNO: 233-139-2

Note : The figures shown above are not the specifications of the product.

4. First-aid measures**Descriptions of first-aid measures****General measures**

IF exposed or concerned: Get medical attention/advice.

Call a POISON CENTER or doctor/physician if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water/shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF SWALLOWED

Rinse mouth.

Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures**Extinguishing media****Suitable extinguishing media**

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media data is not available.

Advice for firefighters**Specific fire-fighting measures**

Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters



Wear fire/flame resistant/retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with full face piece operated positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses or low areas.

Avoid raising dust.

Methods and materials for containment and cleaning up

Sweep up, place in a bag and hold for waste disposal.

Preventive measures for secondary accident

Collect spillage.

7. Handling and storage

Precautions for safe handling

Preventive measures

(Exposure Control for handling personnel)

Do not breathe dust/fume/gas/mist/vapors/spray.

(Protective measures against fire and explosion)

Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

Safety Measures

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing or face protection.

Wear eye protection/face protection.

When using do not eat, drink or smoke.

Any incompatibilities

See "10.Stability and Reactivity"

Advice on general occupational hygiene

Wash contaminated parts thoroughly after handling.

Do not eat, drink or smoke when using this product.

Take off contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage

Keep container tightly closed.

Store in a cool, dry place. Do not store in direct sunlight.

Container and packaging materials for safe handling

Glass

Polyethylene



8. Exposure controls/personal protection

Control parameters

Adopted value

(Boric acid)

ACGIH(2004) TWA: 2mg/m³(l);

STEL: 6mg/m³(l) (URT irr)

Exposure controls

Appropriate engineering controls

Do not use in areas without adequate ventilation.

Eye wash station should be available.

Washing facilities should be available.

Individual protection measures

Respiratory protection

Wear respiratory protection.

Hand protection

Wear protective gloves.

Eye protection

Wear eye/face protection.

9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Crystals or crystalline powder

Color: Colorless to white

Odor: Odorless

Melting point/Freezing point: (decomposes) 171°C

Boiling point or initial boiling point data is not available.

Boiling range data is not available.

Flammability (gases, liquids and solids) data is not available.

Lower and upper explosion limit/flammability limit data is not available.

Flash point data is not available.

Auto-ignition temperature data is not available.

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 5.6 g/100 ml (20°C)

n-Octanol/water partition coefficient: log Pow-1.09

Vapor pressure: negligible (20°C)

Density and/or relative density: 1.5

Relative vapor density (Air=1) data is not available.

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

Decomposes above 100° C . This produces water and irritant boric anhydride. The solution in water is a weak acid. Attacks metals. This produces hydrogen. This generates fire and explosion hazard. (ICSC 0991)

**Conditions to avoid**

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Metals

Hazardous decomposition products

Boric anhydride, Hydrogen

11. Toxicological Information**Information on toxicological effects****Acute toxicity****Acute toxicity (Oral)**

[GHS Cat. Japan, base data]

(Boric acid)

rat LD50=2660-5140mg/kg (NITE risk assessment, 2008)

Irritant properties**Skin corrosion/irritation**

[GHS Cat. Japan, base data]

(Boric acid)

guinea pig/rabbit mild to moderate irritation (PATY 6th, 2012)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Boric acid)

human irritation (ACGIH 7th, 2005et al)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

(Boric acid)

ACGIH-A4(2004) : Not Classifiable as a Human Carcinogen

Reproductive toxicity

[GHS Cat. Japan, base data]

(Boric acid)

cat. 1B; NTP DB, 2013

STOT**STOT-single exposure**

[cat.1]

[GHS Cat. Japan, base data]

(Boric acid)

gastrointestinal tract; CNS (ACGIH 7th, 2005)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Boric acid)

respiratory tract irritation (ECETOC TR 63, 1995)

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

Additional data

May cause lung disorders by massive inhalation of powdered substance.

-e.g. fibrosis of lung tissue, cough, sputum, breath shortness, dyspnea, decline of lung function, interstitial lung disease, pneumothorax



12. Ecological Information

Ecotoxicity

Aquatic toxicity

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Boric acid)

Algae (*Pseudokirchneriella subcapitata*) ErC50=290mg/L/72hr (MOE Japan, 2008)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]

(Boric acid)

Fish (rainbow trout) NOEC=2.1mg/L/87days (MOE Japan, 2008)

Water solubility

(Boric acid)

5 g/100 ml (PHYSPROP_DB, 2005)

Persistence and degradability

Persistence and degradability data is not available.

Bioaccumulative potential

(Boric acid)

log Pow=-1.09 (ICSC, 2014)

Mobility in soil

Mobility in soil data is not available.

Other adverse effects

Ozone depleting chemical data is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods

Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

Not applicable to UN No., UN CLASS

Not applicable to IMDG Code

Not applicable to IATA Dangerous Goods Regulations

Environmental hazards

MARPOL Annex III – Prevention of pollution by harmful substances

Marine pollutants (yes/no) : no

MARPOL Annex V – Prevention of pollution by garbage discharge

Reproductive toxicity: cat.1, 1A, 1B

Boric acid

15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture

US Federal Regulations

Chemicals listed in TSCA Inventory

Boric acid

Other regulatory information

Ensure this material in compliance with federal requirements and ensure conformity to local regulations.



16. Other information**GHS classification and labelling**

Skin Irrit. 2: H315 Causes skin irritation

Eye Irrit. 2: H319 Causes serious eye irritation

Repr. 1B: H360 May damage fertility or the unborn child

STOT SE 1: H370 Causes damage to organs after single exposure

STOT SE 3: H335 May cause respiratory irritation

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (7th revised edition, 2017), UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 20th edit., 2017 UN IMDG Code, 2018 Edition (Incorporating Amendment 39-18)

IATA Dangerous Goods Regulations (61th Edition) 2020

Classification, labelling and packaging of substances and mixtures (Table 3 ECNO6182012)

2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2020 TLVs and BEIs. (ACGIH)

<http://monographs.iarc.fr/ENG/Classification/index.php>

Supplier's data/information

General Disclaimer

This data sheet was created based on the information we currently have and may be revised according to new information. In addition, the precautions apply only to normal handling, and in the case of special handling, please make adequate countermeasure to maintain your safety.

The data given here is based on current knowledge and experience. The purpose of this Safety Data Sheet is to describe the products in terms of their safety requirements. The data does not signify any warranty with regard to the products' properties.

The GHS classification data given here is based on current Japan official data (NITE published in 2019).