1. Identification of the substance/mixture and of the company/undertaking
   Product identifier:
   Product name: Sodium tetraborate, 10-hydrate
   SDS No.: 7303E-3

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 (digestive apparatus; CNS)
   Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)
   Specific target organ toxicity – repeated exposure: Category 1 (nerve/nervous system; respiratory apparatus)

   ENVIRONMENT HAZARDS
   Hazardous to the aquatic environment (Long-term): Category 4
   (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 (digestive apparatus; CNS)
   May cause respiratory irritation
   Causes damage to organs through prolonged or repeated exposure (nerve/nervous system; respiratory apparatus)
   May cause long lasting harmful effects to aquatic life

   PRECAUTIONARY STATEMENT
   Prevention
   Avoid release to the environment.
   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
Get medical advice/attention if you feel unwell.
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: Sodium tetraborate, 10-hydrate
Content (%): 99 (min)
Chemical formula: Na₂B₄O₇・10H₂O
Chemicals No., Japan: 1-69
CAS No.: 1303-96-4
MW: 381.37
Note: The figures shown above are not the specifications of the product.

4. First-aid measures
Descriptions of first-aid measures
General measures
Get medical attention/advice 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.
   Specific hazards arising from the substance or mixture
   Containers may explode when heated.
   Fire may produce irritating, corrosive and/or toxic gases.
   Advice for firefighters
   Specific fire-fighting measures
   Evacuate non-essential personnel to safe area.
   Special protective equipment and precautions for firefighters
   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
(Sodium tetraborate, 10-hydrate)

ACGIH(2004) TWA: 2mg/m³(I);
STEL: 6mg/m³(I) (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: White
- Odor: Odorless
- pH data is not available.
- Boiling point or initial boiling point: 75°C (loses crystal water)
- Boiling range data is not available.
- Melting point/Freezing point: 742°C (anhydrous form); 1575°C (decomposes)
- Decomposition temperature data is not available.
- Flammability (gases, liquids and solids) data is not available.
- Flash point data is not available.
- Auto-ignition temperature data is not available.
- Lower and upper explosion limit/flammability limit data is not available.
- Vapor pressure data is not available.
- Relative vapor density (Air=1) data is not available.
- Density and/or relative density: 1.7
- Kinematic viscosity data is not available.
- Solubility:
  - Solubility in water: 5.1 g/100 ml (20°C)
- n-Octanol/water partition coefficient data is not available.
- No Particle characteristics data is not available.
10. Stability and Reactivity

Reactivity
Not available.

Chemical stability
Effloresce in air.

Possibility of hazardous reactions
The solution in water is a weak base. (ICSC 0567)

Conditions to avoid
Contact with fire source.

Incompatible materials
Not available.

Hazardous decomposition products
Boron compounds

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)
[GHS Cat. Japan, base data]
(Sodium tetraborate, 10-hydrate)
rat LD50=3493–4980mg/kg (EHC 204, 1998)

Acute toxicity (Dermal)
[GHS Cat. Japan, base data]
(Sodium tetraborate, 10-hydrate)
rabbit LD50>10000mg/kg (HSDB, Access on Aug. 2017)

Acute toxicity (Inhalation)
[GHS Cat. Japan, base data]
(Sodium tetraborate, 10-hydrate)
dust: rat LC50=>2mg/L/4hr (PATTY 6th, 2012)

Irritant properties

Skin corrosion/irritation
[GHS Cat. Japan, base data]
(Sodium tetraborate, 10-hydrate)
human dermatitis (ACGIH, 7th, 2001); rabbit/guinea pig irritation (ECETOC TR63, 1995; NITE primary risk assessment, 2008)

Serious eye damage/irritation
[GHS Cat. Japan, base data]
(Sodium tetraborate, 10-hydrate)
human eyes irritating (ATSDR, 2010; EHC 204, 1998); rabbit irritation (PATTY 6th, 2012);
rabbit conjunctival discoloration, blister formation, thickening, corneal irritation recovered on 8 to 21 days (ECETOC TR63, 1995)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity
(Sodium tetraborate, 10-hydrate)

Reproductive toxicity
[GHS Cat. Japan, base data]
(Sodium tetraborate, 10-hydrate)
cat. 1B; NITE primary risk assessment, 2008; ATSDR, 2010; ECHA CL Invt.; Accesss on Aug. 2017

STOT
STOT—in single exposure
[cat.1]
[Sodium tetraborate, 10-hydrate]
digestive apparatus; CNS (Boric acid; ATSDR, 2010; NITE primary assessment, 2008; ACGIH 7th, 2005; ECETOC TR63, 1995)
[cat.3 (resp. irrit.)]
[Sodium tetraborate, 10-hydrate]
respiratory tract irritation (Boric acid or Tetraboron disodium heptaoxide pentahydrate; ACGIH 7th, 2005; ATSDR, 2010; DFGOT, 2013; Access on May 2017)

STOT—in repeated exposure
[cat.1]
[Sodium tetraborate, 10-hydrate]
nerve/nervous system; respiratory apparatus (MOE risk assessment, 2016; EHC 204, 1998; NITE primary risk assessment, 2008; ATSDR, 2010)

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
May cause long lasting harmful effects to aquatic life

Aquatic acute toxicity component(s) data
[Sodium tetraborate, 10-hydrate]
Fish (Danio rerio) LC50 = 14.2 mg·B/L/96hr (cal.) (EHC204, 1998); Crustacea (Daphnia magna) LC50 = 73 mg·B/L/24hr (cal.) (EHC204, 1998)

Water solubility
[Sodium tetraborate, 10-hydrate]
0.593 g/100 ml (HSDB, 2004); 5.1 g/100 ml (20°C) (ICSC, 2014)

Persistence and degradability
[Sodium tetraborate, 10-hydrate]
Not degrade rapidly (metal element)

Bioaccumulative potential
Bioaccumulative potential data is not available.

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
Avoid release to the environment (~ if this is not the intended use).
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
  Sodium tetraborate, 10-hydrate
  Specific target organ toxicity - repeated exposure: cat.1
  Sodium tetraborate, 10-hydrate

15. Regulatory Information
Safe, health and environmental regulations/legislation specific for the substance or mixture
US major regulations
TSCA
  Sodium tetraborate, 10-hydrate

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
  STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure
  Aquatic Chronic 4: H413 May cause long lasting harmful effects to aquatic life

Reference Book
IMDG Code, 2018 Edition (Incorporating Amendment 39–18)
IATA Dangerous Goods Regulations (60th Edition) 2019
Classification, labelling and packaging of substances and mixtures (table3–1 ECNO6182012)
2016 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2019 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 2018).