Date of issue: 2017/11/22
Date of revision: 2023/01/20

Safety Data Sheet

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

Product identifier:

Product name: Tetramethylammonium hydroxide solution, 10% in water

SDS No. : 7697E-4

Relevant identified uses of the substance or mixture and uses advised against

Research and Development

Details of the supplier of the safety data sheet

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN
Division: Chemical Safety Management Department
Telephone number: +81-6-6946-8061
FAX: +81-6-6946-1607
e-mail address: kagakuhinanzenkanri@kishida.co.jp

Section 2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

HEALTH HAZARDS

Acute toxicity (Oral): Category 2

Acute toxicity (Dermal): Category 3

Skin corrosion/irritation: Category 1

Serious eye damage/eye irritation: Category 1

Specific target organ toxicity - single exposure: Category 1 (nervous system)

Specific target organ toxicity - repeated exposure: Category 1 (nervous system)

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

Label elements

Signal word: Danger

HAZARD STATEMENT

Fatal if swallowed

Toxic in contact with skin

Causes severe skin burns and eye damage

Causes serious eye damage

Causes damage to organs (nervous system)

Causes damage to organs through prolonged or repeated exposure (nervous system)

PRECAUTIONARY STATEMENT

Prevention

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

Wash contaminated parts thoroughly after handling.

Wear protective gloves, protective clothing or face protection.

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 exposed or concerned: Call a POISON CENTER/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 ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Take off immediately all 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 SWALLOWED: Immediately call a POISON CENTER/doctor/physician.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Disposal

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

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Tetramethylammonium hydroxide
Content (%):10
Chemical formula:C4H13NO
Chemicals No, Japan:2-186
CAS No.:75-59-2
MW:91.15
ECNO:200-882-9

Ingredient name:Water
Content (%):90
Chemical formula:H2O
CAS No.:7732-18-5
MW:18.02
ECNO:231-791-2

Note : The figures shown above are not the specifications of the product. The content of products may exceed the figures shown above.

Section 4. First-aid measures

Descriptions of first-aid measures

General measures

Get medical advice/attention if you feel unwell.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.

IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or 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. Do NOT induce vomiting.
Immediately call a POISON CENTER/doctor/physician.

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

Unsuitable extinguishing media

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

Section 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.

Methods and materials for containment and cleaning up

Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident

Collect spillage.

Section 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, hot surfaces, sparks, open flames and other ignition sources. No smoking.
(Exhaust/ventilator)
Exhaust/ventilator should be available.
(Safety treatments)
Avoid contact with skin.
Avoid contact with eyes.

Safety Measures

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 immediately all contaminated clothing and wash it before reuse.

Storage

Conditions for safe storage
Keep container tightly closed.
Keep under lock and key.
Chilled storage.
Container and packaging materials for safe handling
Glass
Polyethylene

Section 8. Exposure controls/personal protection

Control parameters
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.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties
Physical state: Liquid
Color: Colorless, Clear
Odor: Characteristic odor
Odor data is not available.
Melting point/Freezing point data is not available.
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: Soluble
n-Octanol/water partition coefficient data is not available.
Vapor pressure data is not available.
Density and/or relative density data is not available.
Relative vapor density (Air=1) data is not available.
Particle characteristics data is not available.

Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

The substance form corrosive, toxic and explosible gases by heat (ex. trimethylamine, methanol and nitrogen oxide). React violently with acid. Corrosive to metals such as aluminium, tin, copper and zinc. This produces flammable/explosive gas (hydrogen). React violently with strong oxidant agent. Reacts with ammonium salts. This produces ammonia that is corrosive and flammable.

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Acids, Strong oxidizing agents, Aluminium, Tin, Copper, Zinc, Ammonium salts

Hazardous decomposition products

Carbon oxides, Nitrogen oxides, Trimethylamine, Methanol, Hydrogen, Ammonia

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Tetramethylammonium hydroxide)

rat LD50=34-50mg/kg (MHLW report, 2000)

Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Tetramethylammonium hydroxide)

rat LD50=112mg/kg (SIAP, 2006)

Irritant properties

Skin corrosion/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Tetramethylammonium hydroxide)

guinea pig extremely severe corrosive (SIAP, 2006)

Serious eye damage/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Tetramethylammonium hydroxide)

guinea pig extremely severe corrosive (SIAP, 2006)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity data is not available.

Specific target organ toxicity (STOT)

STOT-single exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Tetramethylammonium hydroxide)
nervous system (SIAP, 2006)
STOT-repeated exposure
[Data for components of the product]
[cat.1]
[GHS Cat. Japan, base data]
(Tetramethylammonium hydroxide)
nervous system (SIAP, 2006)
Aspiration hazard data is not available.

Section 12. Ecological Information

Toxicity
Toxicity data is not available.
Persistence and degradability
Persistence and degradability data is not available.
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.

Section 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.

Section 14. Transport Information

UN Number or ID Number : 1835
UN Proper Shipping Name :
TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Class or division (Transport hazard class) : 8
Packing group : II
ERG GUIDE No.: 153
IMDG Code (International Maritime Dangerous Goods Regulations)
UN Number or ID Number : 1835
UN Proper Shipping Name :
TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Class or division (Transport hazard class) : 8
Packing group : II
IATA (Dangerous Goods Regulations)
UN Number or ID Number : 1835
UN Proper Shipping Name :
TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION
Class or division (Transport hazard class) : 8
Hazard labels : Corrosive
Packing group : II
Special provisions No.: A3; A803
Environmental hazards
Marine pollutants (yes/no) : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Non Noxious Liquid Substances ; Cat. OS
Water
MARPOL Annex V - HME (Harmful to the Marine Environment)
Specific target organ toxicity - repeated exposure: cat.1
Tetramethylammonium hydroxide

Section 15. Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture
U.S. Toxic Substances Control Act (TSCA) Inventory
Chemicals listed in TSCA Inventory
Tetramethylammonium hydroxide; Water
Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

Section 16. Other information

GHS classification and labelling
Acute toxicity, Category 2: H300 Fatal if swallowed
Acute toxicity, Category 3: H311 Toxic in contact with skin
Skin corrosion/irritation, Category 1: H314 Causes severe skin burns and eye damage
Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage
STOT - single exposure, Category 1: H370 Causes damage to organs
STOT - Repeated exposure, Category 1: H372 Causes damage to organs through prolonged or repeated exposure
References and sources for data
Globally Harmonized System of classification and labelling of chemicals, UN
Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN
IMDG Code, 2020 Edition (Incorporating Amendment 40-20)
IATA Dangerous Goods Regulations (62nd Edition) 2021
2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)
2022 TLVs and BEIs. (ACGIH)
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 2021).