Date of issue: 04/12/2020

Safety Data Sheet

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

Product identifier:

Product name: 0.5mol/L(N/2)-Sodium hydroxide(ethanol solution)

SDS No. : A0112E-1

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

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 2

HEALTH HAZARDS

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Carcinogenicity: Category 1A

Reproductive toxicity: Category 1A

Specific target organ toxicity - single exposure: Category 2(respiratory system/system)

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

Specific target organ toxicity - single exposure: Category 3(Narcosis)

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

Specific target organ toxicity - repeated exposure: Category 2(CNS)

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

Label elements

Signal word: Danger

HAZARD STATEMENT

Highly flammable liquid and vapor

Causes skin irritation

Causes serious eye irritation

May cause cancer

May damage fertility or the unborn child

May cause damage to organs after single exposure(respiratory system/system)

May cause respiratory irritation

May cause drowsiness or dizziness

Causes damage to organs through prolonged or repeated exposure(liver)

May cause damage to organs through prolonged or repeated exposure(CNS)

PRECAUTIONARY STATEMENT

Prevention

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

Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
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/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response

In case of fire: Use appropriate media other than water for extinction.
Get medical advice/attention if you feel unwell.
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 ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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. Keep cool.

Disposal

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

Specific Physical and Chemical hazards

Highly flammable liquid. Vapor/air mixture may explode.

---

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Sodium hydroxide
Content (%):2.4
Chemical formula:HNaO
Chemicals No, Japan:1-410
CAS No.:1310-73-2
MW:40.00
ECNO:215-185-5

Ingredient name:Ethanol
Content (%):86
Chemical formula:C2H5OH
Chemicals No, Japan:2-202
CAS No.:64-17-5
MW:46.07
ECNO:200-578-6

Ingredient name:Water
Content (%):12

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.

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

In case of fire, use water mist, alcohol-resistant foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media

Indoor firefighting equipment or outdoor firefighting equipment
Sprinkler equipment
Dry-powder firefighting equipment - except for phosphate etc.,hydrogen carbonate etc.
Straight stream water extinguisher
Water mist extinguisher
Reinforcing liquid jet extinguisher
Dry-powder extinguisher - except for phosphate etc.,hydrogen carbonate etc.
Bucket of water or tank of water

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 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 peace 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.

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.

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.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

(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/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

8. Exposure controls/personal protection

Control parameters

Adopted value

(Sodium hydroxide)

ACGIH(1992) STEL: C 2mg/m3 (URT, eye & skin irr)

(Ethanol)

ACGIH(2008) STEL: 1000ppm (URT irr)
OSHA-PEL
(Sodium hydroxide)
TWA: 2mg/m3
(Ethanol)
TWA: 1000ppm, 1900mg/m3
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: Liquid
Color: Colorless
Odor: Characteristic odor
Melting point/Freezing point data is not available.
Boiling point or initial boiling point: (Ethanol)78℃
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: (Ethanol)13℃
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: 0.84
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
(Sodium hydroxide)
The solution in water is a strong base. It reacts violently with acid and is corrosive to metals such as aluminium, tin, lead and zinc. This produces a combustible/explosive gas (hydrogen). Reacts with ammonium salts. This produces ammonia. This generates fire hazard.

Contact with moisture and water generates heat. (ICSC 0360)
(Ethanol)
The vapour mixes well with air, explosive mixtures are easily formed.
Reacts slowly with calcium hypochlorite, silver oxide and ammonia. This generates fire and explosion hazard. Reacts violently with strong oxidants such as nitric acid, silver nitrate, mercuric nitrate and magnesium perchlorate. This generates fire and explosion hazard. (ICSC 0044)

Conditions to avoid

Contact with incompatible materials.
Contact with fire source.

Incompatible materials

Acids, Strong oxidizing agents, Metals, Ammonium salts, Calcium hypochlorite, Silver oxide, Ammonia

Hazardous decomposition products

Hydrogen, Ammonia

---

11. Toxicological Information

Information on toxicological effects

Acute toxicity data is not available.

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]
(Sodium hydroxide)
pig/rabbit severe necrosis (ACGIH 7th, 2001 et al)

Serious eye damage/irritation

[GHS Cat. Japan, base data]
(Sodium hydroxide)
rabbit corrosive (SIDS, 2009)
(Ethanol)
rabbit recover within 7 days (ECETOC TR No.48(2), 1998 et al)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

[GHS Cat. Japan, base data]
(Ethanol)
cat.1A; (IARC, 2010)
(Ethanol)
IARC-Gr.1 : Carcinogenic to humans
(Ethanol)
ACGIH-A3(2008) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

Reproductive toxicity

[GHS Cat. Japan, base data]
(Ethanol)
cat. 1A; human : PATTY 6th, 2012

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]
(Sodium hydroxide)
respiratory system/system (PATTY 5th, 2001)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]
(Ethanol)

respiratory tract irritation (PATTY 6th, 2012)
[cat.3 (drow./dizz.)]
[GHS Cat. Japan, base data]
(Ethanol)
narcotic effect (PATTY 6th, 2012; SIDS, 2005)
STOT-repeated exposure
[cat.1]
[GHS Cat. Japan, base data]
(Ethanol)
liver (DFGOT vol.12, 1999)
[cat.2]
[GHS Cat. Japan, base data]
(Ethanol)
CNS (HSDB, Access on Jun. 2013)
Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity
Aquatic toxicity
Hazardous to the aquatic environment (Acute)
[GHS Cat. Japan, base data]
(Sodium hydroxide)
Crustacea (Ceriodaphnia reticulata) LC50=40.4mg/L/48hr (SIDS, 2004)
(Ethanol)
Algae (Chlorella) EC50=1000mg/L/96hr (SIDS, 2005)
Hazardous to the aquatic environment (Long-term)
[GHS Cat. Japan, base data]
(Ethanol)
Crustacea (Ceriodaphnia reticulata) NOEC=9.6mg/L/10days (SIDS, 2005)
Water solubility
(Sodium hydroxide)
109 g/100 ml (20℃) (ICSC, 2010)
(Ethanol)
miscible (ICSC, 2000)
Persistence and degradability
(Ethanol)
Degrade rapidly (BOD_Degradation : 89% (Registered chemicals data check & review, 1993))
Bioaccumulative potential
(Ethanol)
log Pow=-0.32 (ICSC, 2000)
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

UN No.: 1170
Proper Shipping Name :
ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
Class or division : 3
Packing group : II
ERG GUIDE No.: 127
Special provisions No.: 144

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1170
Proper Shipping Name :
ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
Class or division : 3
Packing group : II
Special provisions No.: 144

IATA Dangerous Goods Regulations

UN No.: 1170
Proper Shipping Name :
ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
Class or division : 3
Hazard labels : Flamm.liquid
Packing group : II
Special provisions No.: A3; A58; A180

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

Carcinogenicity: cat.1, 1A, 1B
Ethanol
Reproductive toxicity: cat.1, 1A, 1B
Ethanol
Specific target organ toxicity - repeated exposure: cat.1
Ethanol

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code

Noxious Liquid ; Cat. Y
Sodium hydroxide
Noxious Liquid ; Cat. Z
Ethanol
Non Noxious Liquid ; Cat. OS
Water

15. Regulatory Information

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

US Federal Regulations

Chemicals listed in TSCA Inventory

Ethanol; Sodium hydroxide; Water

Other regulatory information

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

16. Other information

GHS classification and labelling

Flam. Liq. 2: H225 Highly flammable liquid and vapor
Skin Irrit. 2: H315 Causes skin irritation
Eye Irrit. 2: H319 Causes serious eye irritation
Carc. 1A: H350 May cause cancer
Repr. 1A: H360 May damage fertility or the unborn child
STOT SE 2: H371 May cause damage to organs after single exposure
STOT SE 3: H335 May cause respiratory irritation
STOT SE 3: H336 May cause drowsiness or dizziness
STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure

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).