Date of issue: 28/11/2017
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Safety Data Sheet

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

Product identifier:

Product name: Activating solution for Cd-Cu packed column

SDS No. : 0624E-2

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

Skin sensitization: Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 1

Hazardous to the aquatic environment (Long-term): Category 3

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

Label elements

Signal word: Warning

HAZARD STATEMENT

Causes skin irritation

Causes serious eye irritation

May cause an allergic skin reaction

Very toxic to aquatic life

Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

Avoid breathing dust/fume/gas/mist/vapors/spray.

Wash contaminated parts thoroughly after handling.

Wear protective gloves.

Contaminated work clothing should not be allowed out of the workplace.

Wear eye protection/face protection.

Response

Collect spillage.

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

If skin irritation or rash 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.

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name:Sodium hydroxide
Content (%):0.64
Chemical formula:HNaO
Chemicals No, Japan:1-410
CAS No.:1310-73-2
MW:40.00
ECNO:215-185-5

Ingredient name:Ethylenediaminetetraacetic acid disodium salt
Content (%):3.4
Chemical formula:C10H16N2O8Na2
Chemicals No, Japan:2-1265
CAS No.:139-33-3
ECNO:205-358-3

Ingredient name:Copper(II) sulfate, anhyudrous
Content (%):0.79
Chemical formula:CuSO4
Chemicals No, Japan:1-300
CAS No.:7758-98-7
MW:159.61
ECNO:231-847-6

Ingredient name:Water
Content (%):95
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.

4. First-aid measures

Descriptions of first-aid measures

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 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)

Avoid breathing 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

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.

Contaminated work clothing should not be allowed out of the workplace.
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 hydroxide)
ACGIH(1992) STEL: C 2mg/m3 (URT, eye & skin irr)

OSHA-PEL

(Sodium hydroxide)
TWA: 2mg/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: Blue
Odor: None
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: about 7
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: 1.01
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)
(Copper(II) sulfate, anhyudrous)
Reacts violently with hydroxylamine. This generates fire hazard. Reacts with magnesium. This produces flammable/explosive gas (hydrogen). Attacks iron and zinc in the presence of water. (ICSC 0751)

Conditions to avoid

Contact with incompatible materials.
Contact with fire source.

Incompatible materials

Acids, Metals, Ammonium salts, Hydroxylamine, Magnesium

Hazardous decomposition products

Sulfur oxides, Hydrogen, Ammonia

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]
(Copper(II) sulfate, anhyudrous)
rat LD50=300mg/kg (EHC 200, 1998)
[Company proprietary data]
(Ethylenediaminetetraacetic acid disodium salt)
(As Ethylenediaminetetraacetic acid disodium salt,2-hydrate)
rat LD50=2000mg/kg

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]
(Sodium hydroxide)
pig/rabbit severe necrosis (ACGIH 7th, 2001 et al)
(Copper(II) sulfate, anhyudrous)
human corrosive (HSDB, Access on Jun. 2017; MOE risk assessment vol. 13, 2015)
[Company proprietary data]
(Ethylenediaminetetraacetic acid disodium salt)
(As Ethylenediaminetetraacetic acid disodium salt,2-hydrate)
Category 2

Serious eye damage/irritation

[GHS Cat. Japan, base data]
(Sodium hydroxide)
rabbit corrosive (SIDS, 2009)
(Copper(II) sulfate, anhyudrous)

human severe irritation (HSDB, Access on Jun. 2017; MOE risk assessment vol. 13, 2015)
[Company proprietary data]
(Ethylenediaminetetraacetic acid disodium salt)
(As Ethylenediaminetetraacetic acid disodium salt,2-hydrate)
Category 2A

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]
(Copper(II) sulfate, anhyudrous)
cat. 1; EHC 200, 1998; JSOH Gr.2
[Company proprietary data]
(Ethylenediaminetetraacetic acid disodium salt)
(As Ethylenediaminetetraacetic acid disodium salt,2-hydrate)
Category 1

Mutagenic effects data is not available.

Carcinogenic effects data is not available.

Reproductive toxicity

[GHS Cat. Japan, base data]
(Copper(II) sulfate, anhyudrous)
cat. 2; DFGOT vol. 22, 2006; EHC 200, 1998

STOT

STOT-single exposure

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]
(Copper(II) sulfate, anhyudrous)
respiratory tract irritation (ATSDR, 2004; HSDB, Access on Jun. 2017; DFGOT vol. 22, 2006; EHC 200, 1998)

STOT-repeated exposure data is not available.

Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Very toxic to aquatic life
Harmful to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]
(Sodium hydroxide)
Crustacea (Ceriodaphnia reticulata) LC50=40.4mg/L/48hr (SIDS, 2004)
(Copper(II) sulfate, anhyudrous)
Fish (Thymallus arcticus) LC50=0.006mg/L/98hr (0.00258mg-Cu/L, calc.) (WHO EHC, 1998)
[Company proprietary data]
(Ethylenediaminetetraacetic acid disodium salt)
(As Ethylenediaminetetraacetic acid disodium salt,2-hydrate)
Golden ides LC50 >500mg/L/96h

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]
(Copper(II) sulfate, anhyudrous)
Algae (Chlamydomonas reinhardii) NOEC (Growth inhibition)=0.013mg/L/72hr (0.005mg-Cu/L Conv.)

Water solubility

(Sodium hydroxide)
109 g/100 ml (20℃) (ICSC, 2010)

(Copper(II) sulfate, anhyudrous)
20.3 g/100 ml (20℃) (ICSC, 2001)

Persistence and degradability
(Copper(II) sulfate, anhyudrous)
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

UN No.: 3082
Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class or division : 9
Packing group : III
ERG GUIDE No.: 171
Special provisions No.: 274; 331; 335; 375

IMDG Code (International Maritime Dangerous Goods Regulations)
UN No.: 3082
Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class or division : 9
Packing group : III
Special provisions No.: 274; 335; 969

IATA Dangerous Goods Regulations
UN No.: 3082
Proper Shipping Name :
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class or division : 9
Hazard labels : Miscellaneous & Environmentally hazardous
Packing group : III
Special provisions No.: A97; A158; A197

Environmental hazards
MARPOL Annex III – Prevention of pollution by harmful substances
Marine pollutants (yes/no) : yes
MARPOL Annex V – Prevention of pollution by garbage discharge
Hazardous to the aquatic environment – acute hazard: cat.1
Copper(II) sulfate, anhyudrous

Transport in bulk according to Annex II of MARPOL73/78 and IBC Code
Noxious Liquid ; Cat. Y
Sodium hydroxide
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

Ethylenediaminetetraacetic acid disodium salt; Sodium hydroxide; Water; Copper(II) sulfate, anhyudrous

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
Skin Sens. 1: H317 May cause an allergic skin reaction
Aquatic Acute 1: H400 Very toxic to aquatic life
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects

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).