Date of issue: 26/12/2017
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Safety Data Sheet

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

Product identifier:

Product name: Diethylenetriamine

SDS No. : 2373E-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

- Acute toxicity (Oral): Category 4
- Acute toxicity (Dermal): Category 4
- Skin corrosion/irritation: Category 1
- Serious eye damage/eye irritation: Category 1
- Respiratory sensitization: Category 1
- Skin sensitization: Category 1
- Reproductive toxicity: Category 1B

ENVIRONMENT HAZARDS

- Hazardous to the aquatic environment (Acute): Category 3

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

Label elements

Signal word: Danger

HAZARD STATEMENT

- Harmful if swallowed
- Harmful in contact with skin
- Causes severe skin burns and eye damage
- Causes serious eye damage
- May cause allergy or asthma symptoms or breathing difficulties if inhaled
- May cause an allergic skin reaction
- May damage fertility or the unborn child
- Harmful to aquatic life

PRECAUTIONARY STATEMENT

Prevention

- Avoid release to the environment.
- Do not breathe dust/fume/gas/mist/vapors/spray.
- In case of inadequate ventilation wear respiratory protection. (as specified by the manufacturer/supplier or the competent authority.)
- Wash contaminated parts thoroughly after handling.

Wear protective gloves or protective clothing.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves, protective clothing or face protection.
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 experiencing respiratory symptoms: 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 or rash occurs: Get medical advice/attention.
Wash contaminated clothing before reuse.
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 SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Disposal

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

3. Composition/information on ingredients

Mixture/Substance selection:

Substance

Ingredient name:Diethylenetriamine
Content (%):98(min)
Chemical formula:C4H13N3
Chemicals No, Japan:2-159
CAS No.:111-40-0
MW:103.17
ECNO:203-865-4

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 advice/attention.

IF INHALED

Remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
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. Do NOT induce vomiting.
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, 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.

(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.

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.

Keep under lock and key.

Container and packaging materials for safe handling

Glass

Iron

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8. Exposure controls/personal protection

Control parameters

Adopted value

(Diethylenetriamine)

ACGIH(1985) TWA: 1ppm (URT & eye irr)

Notation

(Diethylenetriamine)

Skin

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.

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9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless to yellow

Odor: Characteristic odour

Melting point/Freezing point: −39℃

Boiling point or initial boiling point: (Diethylenetriamine)207℃

Boiling range data is not available.

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

Lower and upper explosion limit/flammability limit:

Lower explosion limit: 1 vol %
Upper explosion limit: 10 vol %
Flash point: (Diethylenetriamine)(C.C.) 97℃; (O.C.) 102℃
Auto-ignition temperature: (Diethylenetriamine)358℃
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: log Pow-1.3
Vapor pressure: 37 Pa(20℃)
Density and/or relative density: 0.96
Relative vapor density (Air=1): 3.56
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
The vapour is heavier than air.
Decomposes on burning. This produces toxic and corrosive gases including nitrogen oxides.
The solution in water is a strong base. It reacts violently with acid and is corrosive.
Reacts violently with oxidants, nitric acid and organic nitro compounds. Attacks many metals in the presence of water. (ICSC 0620)
Conditions to avoid
Contact with incompatible materials.
Contact with fire source.
Incompatible materials
Acids, Oxidizing agents, Nitric acid, Organic nitro compounds
Hazardous decomposition products
Carbon oxides, Nitrogen oxides

11. Toxicological Information

Information on toxicological effects
Acute toxicity
Acute toxicity (Oral)
[GHS Cat. Japan, base data]
(Diethylenetriamine)
rat LD50=1080mg/kg (MOE risk assessment vol.11, 2013)
Acute toxicity (Dermal)
[GHS Cat. Japan, base data]
(Diethylenetriamine)
rabbit LD50=1090mg/kg (MOE risk assessment vol.11, 2013)
Irritant properties
Skin corrosion/irritation
[GHS Cat. Japan, base data]
(Diethylenetriamine)
human/rabbit corrosive (NITE primary risk assessment, 2005)
Serious eye damage/irritation
[GHS Cat. Japan, base data]

(Diethylenetriamine)
human/rabbit corrosive (NITE primary risk assessment, 2005)
Sensitization
Respiratory sensitization
[GHS Cat. Japan, base data]
(Diethylenetriamine)
cat. 1; NITE primary risk assessment, 2005
Skin sensitization
[GHS Cat. Japan, base data]
(Diethylenetriamine)
cat. 1; NITE primary risk assessment, 2005
Mutagenic effects data is not available.
Carcinogenic effects data is not available.
Reproductive toxicity
[GHS Cat. Japan, base data]
(Diethylenetriamine)
cat. 1B; NITE primary risk assessment, 2005
STOT
STOT-single exposure data is not available.
STOT-repeated exposure data is not available.
Aspiration hazard data is not available.

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12. Ecological Information

Ecotoxicity
Aquatic toxicity
Harmful to aquatic life
Hazardous to the aquatic environment (Acute)
[GHS Cat. Japan, base data]
(Diethylenetriamine)
Crustacea (Daphnia magna) EC50=16mg/L/48hr (SIDS, 2002)
Hazardous to the aquatic environment (Long-term)
[GHS Cat. Japan, base data]
(Diethylenetriamine)
Crustacea (Daphnia magna) NOEC=5.6mg/L/21days (SIDS, 2002)
Water solubility
(Diethylenetriamine)
miscible (ICSC, 1996)
Persistence and degradability
(Diethylenetriamine)
Not degrade rapidly (BOD_Degradation : 0% Registered chemicals data check & review 1982)
Bioaccumulative potential
(Diethylenetriamine)
log Pow=-1.3 (ICSC, 1996)
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. or ID No.: 2079

UN Proper Shipping Name :

DIETHYLENETRIAMINE

Class or division (Transport hazard class) : 8

Packing group : II

ERG GUIDE No.: 154

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 2079

Proper Shipping Name :

DIETHYLENETRIAMINE

Class or division : 8

Packing group : II

IATA Dangerous Goods Regulations

UN No.: 2079

Proper Shipping Name :

DIETHYLENETRIAMINE

Class or division : 8

Hazard labels : Corrosive

Packing group : II

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

Diethylenetriamine

Maritime transport in bulk according to IMO instruments

Noxious Liquid ; Cat. Y

Diethylenetriamine

15. Regulatory Information

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

Chemicals listed in TSCA Inventory

Diethylenetriamine

Other regulatory information

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

16. Other information

GHS classification and labelling

Acute Tox. 4: H302 Harmful if swallowed

Acute Tox. 4: H312 Harmful in contact with skin

Skin Corr. 1: H314 Causes severe skin burns and eye damage

Eye Dam. 1: H318 Causes serious eye damage
Resp. Sens. 1: H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin Sens. 1: H317 May cause an allergic skin reaction
Repr. 1B: H360 May damage fertility or the unborn child
Aquatic Acute 3: H402 Harmful to aquatic life

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).