



Safety Data Sheet

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

Product identifier:

Product name: Carbon disulfide

SDS No. : 1440E-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

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2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS

Flammable liquids: Category 1

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Reproductive toxicity: Category 1A

Reproductive toxicity – effects on or via lactation: Additional category

Specific target organ toxicity – single exposure: Category 1(CNS; heart)

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(CNS; CVS; kidney)

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment (Acute): Category 2

Hazardous to the aquatic environment (Long-term): Category 2

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

Label elements



Signal word: Danger

HAZARD STATEMENT

Extremely flammable liquid and vapor

Harmful if inhaled

Causes skin irritation

Causes serious eye irritation

May damage fertility or the unborn child

May cause harm to breast-fed children

Causes damage to organs after single exposure(CNS; heart)

May cause respiratory irritation

May cause drowsiness or dizziness

Causes damage to organs through prolonged or repeated exposure(CNS; CVS; kidney)



Toxic to aquatic life

Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

Avoid release to the environment.

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.

Collect spillage.

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:

Substance

Ingredient name:Carbon disulfide

Content (%):99(min)

Chemical formula:CS₂

Chemicals No, Japan:1-172

CAS No.:75-15-0

MW:76.14

ECNO:200-843-6

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

In case of fire, use dry powder 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

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 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.

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.

Keep under lock and key.

Container and packaging materials for safe handling

Glass

8. Exposure controls/personal protection

Control parameters

Adopted value

(Carbon disulfide)

ACGIH(2005) TWA: 1ppm (PNS impair)

Notation

(Carbon disulfide)

Skin

OSHA-PEL

(Carbon disulfide)

TWA: 20ppm; STEL: C 30ppm

Acceptable maximum peak: 100ppm; Maximum Duration: 30min

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, clear

Odor: Characteristic odor

Melting point/Freezing point: -111°C

Boiling point or initial boiling point: 46°C

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: 50 vol %

Flash point: (Carbon disulfide)(C.C.) -30°C

Auto-ignition temperature: 90°C

Decomposition temperature data is not available.

pH data is not available.

Kinematic viscosity data is not available.

Solubility:

Solubility in water: 0.2g/100 ml (20°C)

n-Octanol/water partition coefficient: $\log P_{ow} 1.84$

Vapor pressure: 48kPa (25°C)

Density and/or relative density: 1.26 g/ml

Relative vapor density (Air=1): 2.63

No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

May convert by light.

Possibility of hazardous reactions

The vapour is heavier than air and may travel along the ground; distant ignition possible.

As a result of flow, agitation, etc., electrostatic charges can be generated.

May decompose explosively on shock, friction or concussion. May explode on heating. The substance may ignite spontaneously on contact with hot surfaces and air. This produces toxic fumes of sulfur dioxide. Reacts violently with oxidants. This generates fire and explosion hazard. Attacks some forms of plastic, rubber and coatings. (ICSC 0022)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Oxidizing agents

Hazardous decomposition products



Carbon oxides, Sulfur oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[GHS Cat. Japan, base data]

(Carbon disulfide)

rat LD50=3188mg/kg (HSDB, Access on Jun. 2017)

Acute toxicity (Inhalation)

[GHS Cat. Japan, base data]

(Carbon disulfide)

vapor: rat LC50= 17.7mg/L/4hr=5677ppm/4hr (HSDB, 2017)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]

(Carbon disulfide)

human/rabbit blistering et al (PATTY 6th, 2012; NITE risk assessment, 2008)

Serious eye damage/irritation

[GHS Cat. Japan, base data]

(Carbon disulfide)

human eyes burning sensation, photophobia (NITE risk assessment, 2008)

Allergenic and sensitizing effects data is not available.

Mutagenic effects data is not available.

Carcinogenicity

(Carbon disulfide)

ACGIH-A4(2005) : Not Classifiable as a Human Carcinogen

Reproductive toxicity

[GHS Cat. Japan, base data]

(Carbon disulfide)

cat. 1A; JSOH vol.55, 2013; CICAD 46, 2002; NITE risk assessment, 2005; MOE risk assessment vol.4, 2005

(Carbon disulfide)

cat. add; JSOH vol.55, 2013; CICAD 46, 2002; NITE risk assessment, 2005

STOT

STOT-single exposure

[cat.1]

[GHS Cat. Japan, base data]

(Carbon disulfide)

CNS; heart (NITE risk assessment, 2008)

[cat.3 (resp. irrit.)]

[GHS Cat. Japan, base data]

(Carbon disulfide)

respiratory tract irritation (NITE risk assessment, 2008)

[cat.3 (drow./dizz.)]

[GHS Cat. Japan, base data]

(Carbon disulfide)

narcotic effect (NITE risk assessment, 2008)

STOT-repeated exposure

[cat.1]

[GHS Cat. Japan, base data]

(Carbon disulfide)

CNS; CVS; kidney (NITE risk assessment, 2008)



Aspiration hazard data is not available.

12. Ecological Information

Ecotoxicity

Aquatic toxicity

Toxic to aquatic life

Toxic to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]

(Carbon disulfide)

Crustacea (Daphnia magna) LC50=2.1mg/L/48hr (NITE primary risk assessment, 2007)

Water solubility

(Carbon disulfide)

0.2g/100 ml (20°C) (ICSC, 2000)

Persistence and degradability

(Carbon disulfide)

GC_Ave. Degradation : 2% (CSCL DB, 1988)

Bioaccumulative potential

(Carbon disulfide)

log Pow=1.84 (ICSC, 2000); BCF= < 60 (Check & Review, Japan)

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.: 1131

Proper Shipping Name :

CARBON DISULPHIDE

Class or division : 3

Subsidiary hazard(s) : 6.1

Packing group : I

ERG GUIDE No.: 131

IMDG Code (International Maritime Dangerous Goods Regulations)

UN No.: 1131

Proper Shipping Name :

CARBON DISULPHIDE

Class or division : 3

Subsidiary hazard(s) : 6.1

Packing group : I

IATA Dangerous Goods Regulations

UN No.: 1131

Proper Shipping Name :

CARBON DISULPHIDE



Class or division : 3

Subsidiary hazard(s) : 6.1

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

Reproductive toxicity: cat.1, 1A, 1B

Carbon disulfide

Specific target organ toxicity – repeated exposure: cat.1

Carbon disulfide

Hazardous to the aquatic environment – long-term hazard: cat.1, 2

Carbon disulfide

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

Noxious Liquid ; Cat. Y

Carbon disulfide

15. Regulatory Information

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

US Federal Regulations

Chemicals listed in TSCA Inventory

Carbon disulfide

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. 1: H224 Extremely flammable liquid and vapor

Acute Tox. 4: H332 Harmful if inhaled

Skin Irrit. 2: H315 Causes skin irritation

Eye Irrit. 2: H319 Causes serious eye irritation

Repr. 1A: H360 May damage fertility or the unborn child

Lact.: H362 May cause harm to breast-fed children

STOT SE 1: H370 Causes 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

Aquatic Acute 2: H401 Toxic to aquatic life

Aquatic Chronic 2: H411 Toxic to aquatic life with long lasting effects

Reference Book

Globally Harmonized System of classification and labelling of chemicals, (6th ed., 2015), 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 2018).