SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.0
Creation Date: July 15, 2019
Revision Date: July 15, 2019

SECTION 1: Identification

1.1 GHS Product identifier

Product name Carbon disulphide

1.2 Other means of identification

Product number -
Other names Carbon Disulfide; Carbon disulfide; carbon disulphide

1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.
Uses advised against no data available

1.4 Supplier's details

Company Shanghai Yansheng Internet Technology Co., Ltd
Address 513, A3 / F, green space future center, Fengxian District, Shanghai, 201400, China
Telephone +86-4000-6969-66

1.5 Emergency phone number

Emergency phone number +86-4000-6969-66
Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Flammable liquids, Category 2
Skin irritation, Category 2
Eye irritation, Category 2
Specific target organ toxicity – repeated exposure, Category 1
Reproductive toxicity, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger
Hazard statement(s) H225 Highly flammable liquid and vapour
H315 Causes skin irritation
H319 Causes serious eye irritation
H372 Causes damage to organs through prolonged or repeated exposure

Precautionary statement(s)

Prevention	P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 Keep container tightly closed. P240 Ground and bond container and receiving equipment. P241 Use explosion-proof [electrical/ventilating/lighting/...] equipment. P242 Use non-sparking tools. P243 Take action to prevent static discharges. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... P264 Wash ... thoroughly after handling. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P270 Do not eat, drink or smoke when using this product. P203 Obtain, read and follow all safety instructions before use.
Response	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower]. P370+P378 In case of fire: Use ... to extinguish. P302+P352 IF ON SKIN: Wash with plenty of water/... P321 Specific treatment (see ... on this label). P332+P317 If skin irritation occurs: Get medical help. P362+P364 Take off contaminated clothing and wash it before reuse. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P319 Get medical help if you feel unwell. P318 IF exposed or concerned, get medical advice.
Storage	P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Carbon disulphide	Carbon disulphide	75-15-0	200-843-6	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Give nothing to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

The material affects the central nervous system, cardiovascular system, eyes, kidneys, liver, and skin. It may be absorbed through the skin as a vapor or liquid, inhaled or ingested. The probable oral lethal dose for a human is between 0.5 and 5 g/kg or between 1 ounce and 1 pint (or 1 pound) for a 70 kg (150 lb.) person. In chronic exposures, the central nervous system is damaged and results in the disturbance of vision and sensory changes as the most common early symptoms. Lowest lethal dose for humans has been reported at 14 mg/kg or 0.98 grams for a 70 kg person. Alcoholics and those suffering from neuropsychic trouble are at special risk. (EPA, 1998)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Basic treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Anticipate seizures and treat if necessary . Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with 0.9% saline (NS) during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 ml/kg up to 200 ml of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Administer activated charcoal . Cover skin burns with sterile dressings after decontamination . Carbon Disulfide and Related Compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

To fight fire, use water, carbon dioxide, dry chemical, fog, mist.

5.2 Specific hazards arising from the chemical

Ignition temperature dangerously low: 212F. Vapors may be ignited by contact with ordinary light bulb, when heated to decomposition, it emits highly toxic fumes of oxides of sulfur. When heated to decomposition, emits highly toxic fumes of sulfur oxides and can react vigorously with oxidizing materials. Avoid air, rust, halogens, metal azides, metals, oxidants; when exposed to heat or flame reacts violently with aluminum, chlorine, azides, hypochlorite, ethylamine diamine, ethylene imine, fluorine, metallic azides of lithium, potassium, cesium, rubidium and sodium, nitrogen oxides, potassium, zinc and (sulfuric acid plus permanganate). Decomposes on standing for a long time. (EPA, 1998)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Remove all ignition sources. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

6.2 Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: complete protective clothing including self-contained breathing apparatus. Remove all ignition sources. Absorb remaining liquid in sand or inert absorbent. Then store and dispose of according to local regulations. Do NOT wash away into sewer.

6.3 Methods and materials for containment and cleaning up

1. remove all ignition sources. 2. ventilate area of spill or leak. 3. for small quantities, absorb on paper towels. evaporate in a safe place (such as a fume hood). allow sufficient time for evaporating vapors to completely clear the hood ductwork. burn the paper in a suitable location away from combustible materials. large quantities can be reclaimed or collected and atomized in a suitable combustion chamber equipped with an appropriate

effluent gas cleaning device. carbon disulfide should not be allowed to enter a confined space, such as a sewer, because of the possibility of an explosion.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. NO contact with hot surfaces. Closed system, ventilation, explosion-proof electrical equipment and lighting. Prevent build-up of electrostatic charges (e.g., by grounding). Do NOT use compressed air for filling, discharging, or handling. Do NOT expose to friction or shock. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Fireproof. Separated from oxidants and food and feedstuffs. Cool. Store in an area without drain or sewer access.... MUST BE STORED IN AIRTIGHT DRUMS, HANDLED WITH PRECAUTIONS, & IN SUMMER KEPT IN SHADE & SPRAYED WITH WATER TO PREVENT PRESSURE DEVELOPING. LARGE QUANTITIES ... MUST BE STORED UNDER WATER.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 1 ppm as TWA; (skin); A4 (not classifiable as a human carcinogen); BEI issued.MAK: 16 mg/m3, 5 ppm; peak limitation category: II(2); skin absorption (H); pregnancy risk group: B.EU-OEL: 15 mg/m3, 5 ppm as TWA; (skin)

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety goggles, face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Carbon disulfide is a clear colorless to light yellow volatile liquid with a strong disagreeable odor. Boiling point 46° C. Flash point -22°F. Flammable over a wide vapor/air concentration range(1%-50%). Vapors are readily ignited; the heat of a common light bulb may suffice. Insoluble in water and more dense (10.5 lb / gal) than water. Hence sinks in

	water. Vapors are heavier than air. Used in the manufacture of rayon and cellophane, in the manufacture of flotation agents and as a solvent.
Colour	Mobile ... liquid
Odour	Purest distillates have sweet, pleasing, and ethereal odor ... usual commercial and reagent grades are foul smelling
Melting point/freezing point	-111°C
Boiling point or initial boiling point and boiling range	46°C(lit.)
Flammability	Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Lower and upper explosion limit/flammability limit	Lower Flammable Limit: 1.3% by volume; Upper Flammable Limit: 50.0% by volume
Flash point	-30°C
Auto-ignition temperature	212°F
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	Coefficient of viscosity = 0.363 at 20 deg C
Solubility	less than 1 mg/mL at 68° F (NTP, 1992)
Partition coefficient n-octanol/water	log Kow = 1.94
Vapour pressure	5.83 psi (20 °C)
Density and/or relative density	1.266g/mLat 25°C(lit.)
Relative vapour density	2.67 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

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 (see ICSC 0074). Reacts violently with oxidants. This generates fire and explosion hazard. Attacks some forms of plastic, rubber and coatings.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Carbon disulfide vapor is explosive, igniting spontaneously on contact with sparks or at temperatures above 147 degrees C.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.CARBON DISULFIDE has an extremely low autoignition temperature (125°C). May ignite or even explode when heated. The vapor or liquid has been known to ignite on contact with steam pipes, particularly if rusted [Anon., J. Roy. Inst. Chem., 1956, 80, p.664]. Explosion hazard when exposed to flame, heat, sparks or friction. Mixtures with lithium, sodium, potassium or dinitrogen tetraoxide may detonate when shocked. Potentially explosive reaction with nitrogen oxide, chlorine, permanganic acid(strong oxidizing agents). Vapor ignites in contact with aluminum powder or fluorine. Reacts violently with azides, ethylamine ethylenediamine, ethylene imine. Emits highly toxic fumes of oxides of sulfur when heated to decomposition [Bretherick, 5th ed., 1995, p. 663]. Sodium amide forms toxic and flammable H2S gas with CS2. (714)

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Incompatible with air, metals, and oxidants.

10.6 Hazardous decomposition products

Decomposes on standing for a long time.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 Rat oral 3188 mg/kg
- Inhalation: LC50 Rat inhalation 25 g/cu m/2 hr
- Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

TLV-A4

Reproductive toxicity

Reproductive effects, such as decreased sperm count and decreased libido in men and menstrual disturbances in women, have been reported from occupational settings involving inhalation exposure to carbon disulfide. (-) Developmental effects, including skeletal and visceral malformations, embryotoxicity, and functional and behavioral disturbances, have been observed in several animal studies across a wide exposure range. Pharmacokinetic studies indicate that carbon disulfide and its metabolites cross the placenta and localize in the target organs of the fetus (brain, blood, liver, and eyes).

STOT-single exposure

The substance is irritating to the eyes, skin and respiratory tract. If this liquid is swallowed, aspiration into the lungs may result in chemical pneumonitis. The substance may cause effects on the central nervous system. Exposure could cause lowering of consciousness. Exposure between 200 and 500 ppm could cause death.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. The substance may have effects on the cardiovascular system and nervous system. This may result in coronary heart disease, severe neurobehavioural effects, polyneuritis and psychoses. Animal tests show that this substance possibly causes toxic effects upon human reproduction.

Aspiration hazard

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: EC50; Species: Daphnia magna (water flea); Concentration: 10 mg/L/24 hr; Condition: not specified; Effect: inhibition of the mobility
- Toxicity to algae: no data available
- Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: It has been demonstrated that the adsorption of carbon disulfide by moist unsterilized soil increases sharply after approximately 3 hr and the time for complete sorption of the gas decreases with repeated dosing(1). This behavior does not occur with air-dried or sterilized soil and has been ascribed to microbial utilization of the chemical(1). Carbon disulfide is oxidized by some heterotrophs(2). Carbon disulfide, present at 100 mg/L, reached 2% of its theoretical BOD in 4 weeks using an activated sludge inoculum at 30 mg/L and the Japanese MITI test(3).

12.3 Bioaccumulative potential

BCFs of <6.1 and <60 were measured in carp for carbon disulfide at concentrations of 50 and 5 ug/L, respectively(1). According to a classification scheme(2), these BCFs suggest bioconcentration in aquatic organisms is low to moderate(SRC).

12.4 Mobility in soil

The Koc of carbon disulfide is estimated as approximately 270(SRC), using a log Kow of 1.94(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that carbon disulfide is expected to have moderate mobility in soil(SRC). The avg adsorption of carbon disulfide after 10 minutes by 4 air-dried soils was 46% but only 12% by the same soils at 50% water-holding capacity(4). However, after 8 hr the rate of adsorption was greater by moist soil, but only when the soil was unsterilized(4). Further experiments suggest that this "adsorption" in moist soils is the result of microbial action(4).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1131 (For reference only, please check.)	IMDG: UN1131 (For reference only, please check.)	IATA: UN1131 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: CARBON DISULPHIDE (For reference only, please check.)	IMDG: CARBON DISULPHIDE (For reference only, please check.)	IATA: CARBON DISULPHIDE (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.)	IMDG: 3 (For reference only, please check.)	IATA: 3 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: I (For reference only, please check.)	IMDG: I (For reference only, please check.)	IATA: I (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No	IMDG: No	IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
Carbon disulphide	Carbon disulphide	75-15-0	200-843-6
European Inventory of Existing Commercial Chemical Substances (EINECS)			Listed.
EC Inventory			Listed.
United States Toxic Substances Control Act (TSCA) Inventory			Listed.
China Catalog of Hazardous chemicals 2015			Listed.
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)			Listed.
Korea Existing Chemicals List (KECL)			Listed.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
Revision Date	July 15, 2019

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple

- ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
- ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

Depending on the degree of exposure, periodic medical examination is suggested.

Any questions regarding this SDS, Please send your inquiry to sds@xixisys.com

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