



## Safety Data Sheet

---

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

**Product identifier:**

Product name: Ziehl carbol-fuchsine solution

SDS No. : E0133E-2

**Relevant identified uses of the substance or mixture and uses advised against**

Research and Development

**Details of the supplier of the safety data sheet**

Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.

Address: 3-1, Honmachibashi, Chuo-ku, Osaka, JAPAN

Division: Chemical Safety Management Department

Telephone number: +81-6-6946-8061

FAX: +81-6-6946-1607

---

### Section 2. Hazards identification

**GHS classification and label elements of the product****Classification of the substance or mixture****PHYSICAL AND CHEMICAL HAZARDS**

Flammable liquids: Category 3

**HEALTH HAZARDS**

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 1

Germ cell mutagenicity: Category 2

Carcinogenicity: Category 1A

Reproductive toxicity: Category 1A

Specific target organ toxicity – single exposure: Category 2 (cardiovascular system, nervous system, respiratory system, kidneys)

Specific target organ toxicity – repeated exposure: Category 2 (blood system, cardiovascular system, liver, central nervous system, kidneys)

**ENVIRONMENT HAZARDS**

Hazardous to the aquatic environment, short-term (acute): Category 3

Hazardous to the aquatic environment, long-term (chronic): Category 3

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

**Label elements**

Signal word: Danger

**HAZARD STATEMENT**

Flammable liquid and vapor

Causes skin irritation

Causes serious eye damage

Suspected of causing genetic defects

May cause cancer

May damage fertility or the unborn child

May cause damage to organs (cardiovascular system, nervous system, respiratory system, kidneys)

May cause damage to organs through prolonged or repeated exposure (blood system,



cardiovascular system, liver, central nervous system, kidneys)

Harmful to aquatic life with long lasting effects

#### PRECAUTIONARY STATEMENT

##### Prevention

Avoid release to the environment.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Keep container tightly closed.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

Do not breathe dust/fume/gas/mist/vapors/spray.

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 to extinguish.

Get medical advice/attention if you feel unwell.

IF exposed or concerned: Get medical advice/attention.

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 or 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.

##### Storage

Store in a well-ventilated place. Keep cool.

##### Disposal

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

#### Specific Physical and Chemical hazards

Flammable liquid. Vapor/air mixture may explode.

---

### Section 3. Composition/information on ingredients

#### Mixture/Substance selection:

##### Mixture

Ingredient name:Ethanol

Content (%):7.2

Chemical formula:C<sub>2</sub>H<sub>5</sub>OH

Chemicals No, Japan:2-202

CAS No.:64-17-5

MW:46.07

ECNO:200-578-6

Ingredient name:Phenol

Content (%):4.7

Chemical formula:C<sub>6</sub>H<sub>6</sub>O

Chemicals No, Japan:3-481

CAS No.:108-95-2

MW:94.11

ECNO:203-632-7



Ingredient name:Fuchsine, basic  
Content (%):1.0  
Chemical formula:C<sub>20</sub>H<sub>19</sub>N<sub>3</sub>.ClH  
Chemicals No, Japan:5-1976  
CAS No.:632-99-5  
MW:337.88  
ECNO:211-189-6

Ingredient name:Water  
Content (%):87  
Chemical formula:H<sub>2</sub>O  
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.

---

#### Section 4. First-aid measures

##### Descriptions of first-aid measures

###### General measures

Get medical advice/attention if you feel unwell.

###### IF INHALED

Remove person to fresh air and keep comfortable for breathing.

Call a POISON CENTER/doctor/physician if you feel unwell.

###### IF ON SKIN (or hair)

Take off immediately all contaminated clothing. Rinse skin with water or shower.

Wash with plenty of soap and water.

If skin irritation or rash occurs: Get medical advice/attention.

If skin irritation 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/doctor/physician if you feel unwell.

---

#### Section 5. Fire-fighting measures

##### Extinguishing media

###### Suitable extinguishing media

Use appropriate extinguishing media suitable for surrounding facilities.

###### Unsuitable extinguishing media

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 resistant or flame 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.



---

**Section 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.

---

**Section 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, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Ground and bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting equipment.

Use non-sparking tools.

Take action to prevent static discharges.

(Exhaust/ventilator)

Exhaust/ventilator should be available.

(Safety treatments)

Avoid contact with skin.

Avoid contact with eyes.

**Safety Measures**

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

---

**Section 8. Exposure controls/personal protection****Control parameters****Adopted value**

(Ethanol)

ACGIH(2009) STEL: 1000ppm (URT irr)

(Phenol)



ACGIH(1996) TWA: 5ppm (URT irr; lung dam; CNS impair)

Notation

(Phenol)

Skin

OSHA-PEL

(Ethanol)

TWA: 1000ppm, 1900mg/m<sup>3</sup>

(Phenol)

TWA: 5ppm, 19mg/m<sup>3</sup>

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.

---

## Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Red

Odor: Slightly characteristic odor

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: about 50°C

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: 0.98

Relative vapor density (Air=1) data is not available.

Particle characteristics data is not available.

---

## Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(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)

(Phenol)

The solution in water is a weak acid. Reacts with oxidants. This generates fire and explosion hazard. (ICSC 0070)

#### Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

#### Incompatible materials

Oxidizing agents, Calcium hypochlorite, Silver oxide, Ammonia

#### Hazardous decomposition products

Carbon oxides, Nitrogen oxides, Chlorine compounds

---

## Section 11. Toxicological Information

### Information on toxicological effects

#### Acute toxicity

##### Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Phenol)

rat LD50=340–530mg/kg (AICIS IMAP, 2014)

##### Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Phenol)

rat LD50=0.50mL/kg (converted value by density 1.071g/cm<sup>3</sup>: 536mg/kg) (EPA Pesticides RED, 2009)

#### Irritant properties

##### Skin corrosion/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Phenol)

(OECD TG 431) skin corrosive (AICIS IMAP, 2014)

##### Serious eye damage/irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ethanol)

rabbit recover within 7 days (ECETOC TR No.48(2), 1998 et al)

(Phenol)

rabbit (equivalent to OECD TG 405) severe conjunctivitis, iritis, corneal opacity and ulcers, not recover after 14 days (CERI/NITE Hazard Assessment Report, 2008 et al)

Allergenic and sensitizing effects data is not available.

#### Germ cell mutagenicity

[Data for components of the product]

[GHS Cat. Japan, base data]

(Phenol)

cat. 2; EU REACH CoRAP, 2015; ATSDR, 2008 et al.

#### Carcinogenicity

[Data for components of the product]

[GHS Cat. Japan, base data]



(Ethanol)

cat.1A; (IARC, 2010)

(Fuchsine, basic)

cat.2; IARC Gr. 2B (IARC 99, 2010 (magenta mixture) et al.)

[IARC]

(Ethanol)

Group 1 : Carcinogenic to humans

(Phenol)

Group 3 : Not classifiable as to its carcinogenicity to humans

(Fuchsine, basic)

Group 2B : Possibly carcinogenic to humans

[ACGIH]

(Ethanol)

A3(2009) : Confirmed Animal Carcinogen with Unknown Relevance to Humans

(Phenol)

A4(1996) : Not Classifiable as a Human Carcinogen

#### Reproductive toxicity

[Data for components of the product]

[GHS Cat. Japan, base data]

(Ethanol)

cat. 1A; human : PATTY 6th, 2012

(Phenol)

cat. 1B; EFSA, 2013 et al.

#### Specific target organ toxicity (STOT)

##### STOT-single exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Phenol)

cardiovascular system, nervous system, respiratory system, kidneys (CERI/NITE Hazard Assessment Report, 2008)

[cat.3 (respiratory tract irritation)]

[GHS Cat. Japan, base data]

(Ethanol)

respiratory tract irritation (PATTY 6th, 2012)

[cat.3 (narcotic effects)]

[GHS Cat. Japan, base data]

(Ethanol)

narcotic effect (PATTY 6th, 2012; SIDS, 2005)

##### STOT-repeated exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Ethanol)

liver (DFGOT vol.12, 1999)

(Phenol)

blood system, cardiovascular system, liver, central nervous system, kidneys (CERI/NITE Hazard Assessment Report, 2008)

[cat.2]

[GHS Cat. Japan, base data]

(Ethanol)

central nervous system (HSDB, Access on Jun. 2013)

Aspiration hazard data is not available.



---

**Section 12. Ecological Information****Toxicity****Aquatic toxicity**

[Data for components of the product]

Hazardous to the aquatic environment, short-term (acute)

(Ethanol)

(Phenol)

Algae (*Chlorella*) EC50=1000mg/L/96hr (SIDS, 2005)

(Ethanol)

Crustacea (*Ceriodaphnia dubia*) LC50=3.1mg/L/48hr (MOE Result of the initial environmental risk assessment of chemicals, 2002)

Hazardous to the aquatic environment, long-term (chronic)

[GHS Cat. Japan, base data]

(Ethanol)

Crustacea (*Ceriodaphnia* sp.) NOEC=9.6mg/L/10days (SIDS, 2005)

(Phenol)

Fish (*Cirrhina mrigala*) NOEC=0.077mg/L/60days (SIAP, 2004)**Water solubility**

(Ethanol)

miscible (ICSC, 2000)

(Phenol)

moderate (ICSC, 2001)

**Persistence and degradability**

[Data for components of the product]

(Ethanol)

Rapidly degradable (BOD\_Degradation : 89% (METI existing chemical safety inspections, 1993))

(Phenol)

Rapidly degradable (BOD\_Degradation : 85% (METI Existing Chemical Substances Safety Inspections Data, 1979))

**Bioaccumulative potential**

[Data for components of the product]

(Ethanol)

log Pow=-0.32 (ICSC, 2000)

(Phenol)

log Pow=1.46 (ICSC, 2001)

**Mobility in soil**

Mobility in soil data is not available.

**Other adverse effects**

Ozone depleting chemical data is not available.

---

**Section 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.

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





---

**Section 14. Transport Information**

UN Number or ID Number : 1170

UN Proper Shipping Name :

ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

Class or division (Transport hazard class) : 3

Packing group : III

ERG GUIDE No.: 127

Special provisions No.: 144; 223

**IMDG Code (International Maritime Dangerous Goods Regulations)**

UN Number or ID Number : 1170

UN Proper Shipping Name :

ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

Class or division (Transport hazard class) : 3

Packing group : III

Special provisions No.: 144; 223

**IATA (Dangerous Goods Regulations)**

UN Number or ID Number : 1170

UN Proper Shipping Name :

ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

Class or division (Transport hazard class) : 3

Hazard labels : Flamm.liquid

Packing group : III

Special provisions No.: A3; A58; A180

**Environmental hazards**

Marine pollutants (yes/no) : no

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Noxious Liquid Substances ; Cat. Y

Phenol

Noxious Liquid Substances ; Cat. Z

Ethanol

Non Noxious Liquid Substances ; Cat. OS

Water

---

**Section 15. Regulatory Information**

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

U.S. Toxic Substances Control Act (TSCA) Inventory

Chemicals listed in TSCA Inventory

Ethanol; Phenol; Fuchsine, basic; Water

**Other regulatory information**

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

---

**Section 16. Other information****GHS classification and labelling**

Flammable liquids, Category 3: H226 Flammable liquid and vapour

Skin corrosion/irritation, Category 2: H315 Causes skin irritation

Serious eye damage/eye irritation, Category 1: H318 Causes serious eye damage

Germ cell mutagenicity, Category 2: H341 Suspected of causing genetic defects

Carcinogenicity, Category 1A: H350 May cause cancer

Reproductive toxicity, Category 1A: H360 May damage fertility or the unborn child

STOT – single exposure, Category 2: H371 May cause damage to organs



STOT – Repeated exposure, Category 2: H373 May cause damage to organs through prolonged or repeated exposure

Hazardous to the aquatic environment, short-term (acute), Category 3: H402 Harmful to aquatic life

Hazardous to the aquatic environment, long-term (chronic), Category 3: H412 Harmful to aquatic life with long lasting effects

#### References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 21th edit., 2019 UN

IMDG Code, 2020 Edition (Incorporating Amendment 40-20)

IATA Dangerous Goods Regulations (62nd Edition) 2021

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2022 TLVs and BEIs. (ACGIH)

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 2021).