



Safety Data Sheet

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

Product identifier:

Product name: Gram's stain solution I

SDS No. : E0045E-3

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 (%):7.3

Chemical formula:C₂H₅OH

Chemicals No, Japan:2-202

CAS No.:64-17-5

MW:46.07

ECNO:200-578-6

Ingredient name:Phenol

Content (%):4.9

Chemical formula:C₆H₆O

Chemicals No, Japan:3-481

CAS No.:108-95-2

MW:94.11

ECNO:203-632-7



Ingredient name:C.I. Basic Violet 3

Content (%):0.69

Chemical formula:C25H30N3Cl

Chemicals No, Japan:5-1971

CAS No.:548-62-9

MW:407.99

ECNO:208-953-6

Ingredient name:Water

Content (%):87

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.

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 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.

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 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/m³

(Phenol)

TWA: 5ppm, 19mg/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.

Section 9. Physical and Chemical Properties**Information on basic physical and chemical properties**

Physical state: Liquid

Color: Purple

Odor: 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: (reference)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 data is not available.

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)

(C.I. Basic Violet 3)

rat LD50=180mg/kg (JECFA FAS69, 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/cm³: 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)
(C.I. Basic Violet 3)

human eyes irritation (HSDB, Access on May 2019)

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)

(C.I. Basic Violet 3)

cat.1B; (JECFA FAS69, 2014 et al.)

[IARC]

(Ethanol)

Group 1 : Carcinogenic to humans

(Phenol)

Group 3 : Not classifiable as to its carcinogenicity to humans

(C.I. Basic Violet 3)

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

[EU]

(C.I. Basic Violet 3)

Category 2; Substances suspected human carcinogens

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)

[GHS Cat. Japan, base data]

(Ethanol)

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

(Phenol)

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; C.I. Basic Violet 3; 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).