



Safety Data Sheet

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

Product identifier:

Product name: 0.1mol/L(N/10)-Sodium methoxide(benzene solution)

SDS No. : A0175E-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 2

HEALTH HAZARDS

Acute toxicity (Inhalation): Category 4

Skin corrosion/irritation: Category 2

Serious eye damage/eye irritation: Category 2

Germ cell mutagenicity: Category 1B

Carcinogenicity: Category 1A

Reproductive toxicity: Category 1B

Specific target organ toxicity – single exposure: Category 1 (cardiovascular system, central nervous system, organ of vision, systemic toxicity)

Specific target organ toxicity – single exposure: Category 3 (Respiratory tract irritation)

Specific target organ toxicity – single exposure: Category 3 (Narcotic effects)

Specific target organ toxicity – repeated exposure: Category 1 (hematopoietic system, immune system, central nervous system, organ of vision)

Aspiration hazard: Category 1

ENVIRONMENT HAZARDS

Hazardous to the aquatic environment, short-term (acute): Category 2

Hazardous to the aquatic environment, long-term (chronic): Category 2

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

Label elements



Signal word: Danger

HAZARD STATEMENT

H225 Highly flammable liquid and vapor

H332 Harmful if inhaled



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

- H315 Causes skin irritation
- H319 Causes serious eye irritation
- H340 May cause genetic defects
- H350 May cause cancer
- H360 May damage fertility or the unborn child
- H370 Causes damage to organs (cardiovascular system, central nervous system, organ of vision, systemic toxicity)
- H335 May cause respiratory irritation
- H336 May cause drowsiness or dizziness
- H372 Causes damage to organs through prolonged or repeated exposure (hematopoietic system, immune system, central nervous system, organ of vision)
- H304 May be fatal if swallowed and enters airways
- H411 Toxic to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention

- P202 Do not handle until all safety precautions have been read and understood.
- P273 Avoid release to the environment.
- 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.
- P260 Do not breathe dust/fume/gas/mist/vapors/spray.
- P271 Use only outdoors or in a well-ventilated area.
- P264 Wash contaminated parts thoroughly after handling.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P280 Use personal protective equipment as required.
- P270 Do not eat, drink or smoke when using this product.

Response

- P370 + P378 In case of fire: Use appropriate media to extinguish.
- P391 Collect spillage.
- P314 Get medical advice/attention if you feel unwell.
- P308 + P313 IF exposed or concerned: Get medical advice/attention.
- P312 Call a POISON CENTER/doctor/physician if you feel unwell.
- P308 + P311 IF exposed or concerned: Call a POISON CENTER/doctor/physician.
- P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
- P332 + P313 If skin irritation occurs: Get medical advice/attention.
- 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.
- P337 + P313 If eye irritation persists: Get medical advice/attention.
- P331 IF SWALLOWED: Do NOT induce vomiting.
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician.

Storage

- P403 + P233 Store in a well-ventilated place. Keep container tightly closed.



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal

P501 Dispose of contents/container in accordance with local/national regulation.

Specific adverse human health effects

See "11. Toxicological Information".

Section 3. Composition/information on ingredients

Mixture/Substance selection:

Mixture

Ingredient name	Content (%)	CAS No.	Chemicals No, Japan	Chemical formula
Sodium methoxide	0.62	124-41-4	2-203	CH ₃ ONa
Methanol	13	67-56-1	2-201	CH ₃ OH
Benzene	86	71-43-2	3-1	C ₆ H ₆

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

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.

Do NOT induce vomiting.

Immediately call a POISON CENTER/doctor/physician.

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.

In case of fire, use spraying loaded liquid, foam (water-soluble liquid: alcohol-resistant foam), inactive gases, dry powder, dry sand to extinguish.



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

*Fire Service Act Group 4 Hazardous Materials

Unsuitable extinguishing media

Indoor Fire Plug System or Outdoor Fire Plug System

Sprinkler System

Dry Chemical Extinguishing System—Others (except for phosphates etc., Hydrogen Carbonates etc.)

Fire Extinguisher Discharging Jet Water/Spraying Water

Fire Extinguisher Discharging Jet Loaded Liquid

Fire Extinguisher Discharging Dry Extinguishing agents—Others (except for phosphates etc., Hydrogen Carbonates etc.)

Water Bucket or Water Tank

*Cabinet Order Concerning the Control of Hazardous Materials (Attached Table 5) Group 4 Hazardous Materials

Specific hazards arising from the substance or mixture

Fire may produce irritating, corrosive and/or toxic gases.

Runoff from fire control or dilution water may cause pollution.

See "10.Stability and Reactivity".

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 a full facepiece operated in the positive pressure mode.

Section 6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures

Keep unauthorized personnel away.

Ventilate area until material pick up is complete.

Wear proper protective equipment.

Environmental precautions

Prevent spills from entering sewers, watercourses, low areas or rivers. To be careful not discharged to the environment without being properly handled waste water contaminated.

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.



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

- 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

- Do not handle until all safety precautions have been read and understood.
- Use only outdoors or in a well-ventilated area.
- Wear protective gloves/protective clothing/eye protection/face protection.
- Wash hands et al thoroughly after handling.
- 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 locked up. (P405)
- Store in a cool, dry place. Do not store in direct sunlight.
- Storage in accordance with local/national regulation.

Container and packaging materials for safe handling

- Use closed unbreakable containers.

Section 8. Exposure controls/personal protection

Control parameters

Adopted value

(Methanol)

ACGIH(2009) TWA: 200ppm;

STEL: 250ppm (Headache; eye dam; dizziness; nausea)

(Benzene)

ACGIH(2023) TWA: 0.02ppm (Myelodysplastic syndrome; acute myeloid leukemia; leukemia; hematologic eff; chromosomal dam)

[ACGIH] Notation

(Methanol)

Skin

(Benzene)

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.



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

Individual protection measures

Recommend to use protective equipment in conformity with the standards.

Use appropriate protective equipment in accordance with local/national regulation.

Respiratory protection

Wear respiratory protection (dust-proof mask/gas mask). Select chemical cartridge corresponding to type of gases when using a gas mask.

Hand protection

Wear impervious protective glove.

Eye protection

Wear eye/face protection. Wear safety goggles in cases gas is generated.

Skin and body protection

Wear protective clothing.

Section 9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid

Color: Colorless

Odor: Characteristic odor

Melting point/Freezing point data is not available.

Boiling point or initial boiling point: (Benzene)80°C

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: (Benzene)-11°C (c.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: Insoluble

Solubility in solvent data is not available.

n-Octanol/water partition coefficient data is not available.

Vapor pressure data is not available.

Density and/or relative density: 0.87

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

Particle characteristics data is not available.

Other information

Other information is not available.

Section 10. Stability and Reactivity

Reactivity

Not available.

Chemical stability

Stable under normal storage/handling conditions.

Possibility of hazardous reactions

(Sodium methoxide)

Heating may cause violent combustion or explosion. Reacts violently with water. This produces flammable methanol and corrosive sodium hydroxide. The substance may ignite



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

spontaneously on contact with moist air. The substance is a strong reducing agent. The substance is a strong base. It reacts violently with acid and is corrosive. Attacks many metals. This produces flammable/explosive gas (hydrogen). (ICSC 0771)

(Methanol)

The vapour mixes well with air, explosive mixtures are easily formed.

Reacts violently with strong oxidants, acids and reducing agents. This generates fire and explosion hazard. (ICSC 0057)

(Benzene)

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.

Reacts violently with oxidants, nitric acid, sulfuric acid and halogens. This generates fire and explosion hazard. Attacks plastics and rubber. (ICSC 0015)

Conditions to avoid

Contact with incompatible materials.

Contact with fire source.

Incompatible materials

Acids, Oxidizing agents, Reducing agents, Metals, Nitric acid, Sulfuric acid, Halogens

Hazardous decomposition products

Carbon oxides, Methanol, Sodium hydroxide, Hydrogen

Section 11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Sodium methoxide)

rat LD50=800mg/kg (SIDS, 2008)

(Methanol)

human LD50=ca. 1400mg/kg (DFGOT vol.16, 2001)

(Benzene)

male rat LD50=3400-5600mg/kg (equivalent to OECD TG 401) (NITE Initial Risk Assessment Report, 2008)

Acute toxicity (Dermal)

[Data for components of the product]

[GHS Cat. Japan, base data]

(Methanol)

rabbit LD50=15800mg/kg (DFGOT vol.16, 2001)

(Benzene)

rabbit LD50 >8200mg/kg (EU RAR, 2008)

Acute toxicity (Inhalation)

[Product]

Category 4, Harmful if inhaled

[Data for components of the product]

[GHS Cat. Japan, base data]

(Methanol)

vapor: rat LC50>31500ppm/4hr (DFGOT vol.16, 2001)

(Benzene)

vapor: female rat LC50=13700ppm/4hr (NITE Initial Risk Assessment Report, 2008)



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

Irritant properties**Skin corrosion/irritation**

[Product]

Category 2, Causes skin irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Sodium methoxide)

rabbit corrosive (SIDS, Access on Aug. 2008)

(Benzene)

skin irritant (ATSDR, 2007)

Serious eye damage/irritation

[Product]

Category 2, Causes serious eye irritation

[Data for components of the product]

[GHS Cat. Japan, base data]

(Sodium methoxide)

rabbit necrosis (SIDS, Access on Aug. 2008)

(Methanol)

rabbit category 2 : Draize test (EHC 196, 1997)

(Benzene)

rabbit moderate conjunctival irritation and transient corneal injury (EU RAR, 2008)

Allergenic and sensitizing effects data is not available.

Germ cell mutagenicity

[Product]

Category 1B, May cause genetic defects

[Data for components of the product]

[GHS Cat. Japan, base data]

(Benzene)

cat. 2; IARC 120, 2018; EU RAR, 2008

Carcinogenicity

[Product]

Category 1A, May cause cancer

[Data for components of the product]

[GHS Cat. Japan, base data]

(Benzene)

cat.1A; EU Carc. 1A (EU CLP, Accessed Sep. 2022)

[IARC]

(Benzene)

Group 1 : Carcinogenic to humans

[ACGIH]

(Benzene)

A1(2023) : Confirmed Human Carcinogen

[NTP]

(Benzene)

Known : Known to be Human Carcinogens

[EU]

(Benzene)

Category 1A; Substances known to have carcinogenic potential for humans

Reproductive toxicity

[Product]



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

Category 1B, May damage fertility or the unborn child

[Data for components of the product]

[GHS Cat. Japan, base data]

(Methanol)

cat. 1B; mouse : PATTY 5th, 2001

(Benzene)

cat. 2; NITE Initial Risk Assessment Report, 2008

Specific target organ toxicity (STOT)

STOT-single exposure

[Product]

Category 1, Causes damage to organs

Category 3, May cause respiratory irritation

Category 3, May cause drowsiness or dizziness

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Methanol)

central nervous system, organ of vision, systemic toxicity (DFGOT vol.16, 2001)

(Benzene)

cardiovascular system, central nervous system (NITE Initial Risk Assessment Report, 2008)

[cat.3 (respiratory tract irritation)]

[GHS Cat. Japan, base data]

(Benzene)

respiratory tract irritation (NITE Initial Risk Assessment Report, 2008)

[cat.3 (narcotic effects)]

[GHS Cat. Japan, base data]

(Sodium methoxide)

narcotic effect (SIDS, 2008)

(Methanol)

narcotic effect (PATTY 5th, 2001)

(Benzene)

narcotic effect (NITE Initial Risk Assessment Report, 2008)

STOT-repeated exposure

[Product]

Category 1, Causes damage to organs through prolonged or repeated exposure

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Methanol)

central nervous system, organ of vision (ACGIH 7th, 2001)

(Benzene)

hematopoietic system, immune system, central nervous system (IPCS PIM 063, Accessed Sep.

2022; EHC 150, 1993; AICIS PEC, 2001; NITE Initial Risk Assessment Report, 2008)

Aspiration hazard

[Product]

Category 1, May be fatal if swallowed and enters airways

[Data for components of the product]

[cat.1]

[GHS Cat. Japan, base data]

(Benzene)



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

cat. 1; hydrocarbon, kinematic viscosity=0.69 mm²/s (cal.) (Dynamic viscosity : 0.604 mPa.s (25°C), Density : 0.8756 g/cm³ (20°C)) (HSDB, Accessed Sep. 2022)

Section 12. Ecological Information

Toxicity

Aquatic toxicity

[Product]

Category 2, Toxic to aquatic life

Category 2, Toxic to aquatic life with long lasting effects

[Data for components of the product]

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

[GHS Cat. Japan, base data]

(Methanol)

Crustacea (Brine shrimp) LC50=900.73mg/L/24hr (EHC196, 1998)

(Benzene)

Fish (Oncorhynchus mykiss) LC50=5.3mg/L/96hr (EURAR, 2008)

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

[GHS Cat. Japan, base data]

(Benzene)

Fish (Pimephales promelas) NOEC=0.8mg/L/32days (EURAR, 2008)

Water solubility

(Sodium methoxide)

reaction (ICSC, 2009)

(Methanol)

100 g/100 ml (PHYSROP_DB, 2009)

(Benzene)

0.18 g/100 ml (25°C) (ICSC, 2003)

Persistence and degradability

[Data for components of the product]

(Benzene)

Not rapidly degradable (BOD_Degradation: 39 – 41% (METI Existing Chemical Substances Safety Inspections Data, 1979))

Bioaccumulative potential

[Data for components of the product]

(Methanol)

log Pow=-0.82/-0.66 (ICSC, 2000)

(Benzene)

log Pow=2.13 (ICSC, 2003)

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.



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

Dispose of contents/container as industrial waste. Accordance with local/national regulation.

Section 14. Transport Information

UN Number or ID Number : 1993

UN Proper Shipping Name :

FLAMMABLE LIQUID, N.O.S.

Class or division (Transport hazard class) : 3

Packing group : II

ERG GUIDE No.: 128

Special provisions No.: 274

IMDG Code (International Maritime Dangerous Goods Regulations)

UN Number or ID Number : 1993

UN Proper Shipping Name :

FLAMMABLE LIQUID, N.O.S.

Class or division (Transport hazard class) : 3

Packing group : II

Special provisions No.: 274

IATA (Dangerous Goods Regulations)

UN Number or ID Number : 1993

UN Proper Shipping Name :

FLAMMABLE LIQUID, N.O.S.

Class or division (Transport hazard class) : 3

Hazard labels : Flamm.liquid

Packing group : II

Special provisions No.: A3

Environmental hazards

Marine pollutants (yes/no) : yes

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

Methanol; Benzene; Sodium methoxide

Other regulatory information

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

Section 16. Other information

References and sources for data

Globally Harmonized System of classification and labelling of chemicals, UN

Recommendations on the TRANSPORT OF DANGEROUS GOODS 22nd edit., 2021 UN

IMDG Code, 2022 Edition (Incorporating Amendment 41-22)

IATA Dangerous Goods Regulations (65th Edition) 2024

2020 EMERGENCY RESPONSE GUIDEBOOK (US DOT)

2024 TLVs and BEIs. (ACGIH)

Supplier's data/information



0.1mol/L(N/10)-Sodium methoxide(benzene solution),A0175E-2,2024/04/16

General Disclaimer

Please provide SDS to customers for selling or transferring.

All chemicals have unknown hazard. Handle the product with care.

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 2022).