

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 26-Feb-2024
 Revision Number 2.05

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Methylhydrazine
Product Code	133-08003,137-08006

Supplier FUJIFILM Wako Pure Chemical Corporation
 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
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Recommended uses For research use only

Restrictions on use Seek expert judgment when using for purposes other than those recommended.

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Flammable liquids

Acute toxicity - Oral

Acute toxicity - Dermal

Acute toxicity - Inhalation (Vapors)

Skin corrosion/irritation

Serious eye damage/eye irritation

Carcinogenicity

Reproductive Toxicity

Specific target organ toxicity (single exposure)

Category 1 blood, nervous system

Specific target organ toxicity (repeated exposure)

Category 1 blood, liver, kidneys, respiratory system, adrenal gland

Acute aquatic toxicity

Chronic aquatic toxicity

Category 1

Category 2

Category 2

Category 1

Category 2

Category 2A

Category 2

Category 2

Category 1

Category 1

Category 1

Category 1

Pictograms



Signal word

Danger

Hazard statements

H224 - Extremely flammable liquid and vapor

H315 - Causes skin irritation

H319 - Causes serious eye irritation

H300 - Fatal if swallowed

H310 - Fatal in contact with skin

H330 - Fatal if inhaled

H351 - Suspected of causing cancer

H361 - Suspected of damaging fertility or the unborn child

H410 - Very toxic to aquatic life with long lasting effects

H400 - Very toxic to aquatic life

H370 - Causes damage to the following organs: blood, nervous system

H372 - Causes damage to the following organs through prolonged or repeated exposure: blood, liver, kidneys, respiratory system, adrenal gland

Precautionary statements-(Prevention)

- Obtain special instructions before use
- Do not handle until all safety precautions have been read and understood
- Use personal protective equipment as required
- Do not get in eyes, on skin, or on clothing
- Do not breathe dust/fume/gas/mist/vapors/spray
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- 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/bond container and receiving equipment
- Use explosion-proof electrical/ ventilating / lighting / equipment
- Use only non-sparking tools
- Take precautionary measures against static discharge

Precautionary statements-(Response)

- IF exposed: Call a POISON CENTER or doctor/physician
- 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
- Immediately call a POISON CENTER or doctor/physician
- Wash contaminated clothing before reuse
- If skin irritation occurs: Get medical advice/attention
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Rinse mouth
- In case of fire: Use suitable extinguishing media for extinction
- Collect spillage

Precautionary statements-(Storage)

- Store locked up
- Store in a well-ventilated place. Keep cool

Precautionary statements-(Disposal)

- Dispose of contents/container to an approved waste disposal plant

Others

Other hazards Not available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Single Substance or Mixture Substance

Formula CH₃NHNH₂

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Methylhydrazine	98.0	46.07	(2)-2385,(2)-200	公表	60-34-4

Note on ISHL No.: * in the table means announced chemical substances.

Section 4: FIRST AID MEASURES

Inhalation

Remove to fresh air. If symptoms persist, call a physician.

Skin contact

Wash off immediately with soap and plenty of water. If symptoms persist, call a physician.

Eye contact

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediate medical attention is required.

Ingestion

Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without medical advice.

Protection of first-aiders

Use personal protective equipment as required.

Section 5: FIRE FIGHTING MEASURES**Suitable extinguishing media**

Water spray (fog), Carbon dioxide (CO₂), Foam, Extinguishing powder, Sand

Unsuitable extinguishing media

No information available

Specific hazards arising from the chemical product

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

Special extinguishing method

No information available

Special protective actions for fire-fighters

Use personal protective equipment as required. Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 6: ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

For indoor, provide adequate ventilation process until the end of working. Deny unnecessary entry other than the people involved by, for example, using a rope. While working, wear appropriate protective equipments to avoid adhering it on skin, or inhaling the gas. Work from windward, and retract the people downwind.

Environmental precautions

To be careful not discharged to the environment without being properly handled waste water contaminated.

Methods and materials for contaminant and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

Recovery, neutralization

No information available

Secondary disaster prevention measures

Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: HANDLING AND STORAGE**Handling****Technical measures**

Do not give shock. Highly flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents. Use with local exhaust ventilation.

Precautions

Do not rough handling containers, such as upsetting, falling, giving a shock, and dragging. Prevent leakage, overflow, and scattering. Not to generate steam and dust in vain. Seal the container after use. After handling, wash hands and face, and then gargle. In places other than those specified, should not be smoking or eating and drinking. Should not be brought contaminated protective equipment and gloves to rest stops. Deny unnecessary entry of non-emergency personnel to the handling area.

Safety handling precautions

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity)

Storage**Safe storage conditions****Storage conditions**

Keep container protect from light, store

Safe packaging material	in well-ventilated place at room temperature (preferably cool). Keep container tightly closed. Packed with an inert gas.
Incompatible substances	Glass Strong oxidizing agents, Strong acids

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls

In case of indoor workplace, seal the source or use a local exhaust system. Provide the safety shower facility, and hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Methylhydrazine 60-34-4	N/A	N/A	TWA: 0.01 ppm Skin

Personal protective equipment

Respiratory protection	gas mask for organic gas (JIS T 8152)
Hand protection	chemical protective gloves (JIS T 8116)
Eye protection	protective eyeglasses or chemical safety goggles (JIS T 8147)
Skin and body protection	Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

If this product is classified as "Chemical Substances Hazardous to Skin, etc.", use appropriate protective equipment to them.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form

Color	Colorless - slightly yellow
Turbidity	clear
Appearance	liquid

Odor

characteristic odor

Melting point/freezing point

-20.9 °C

Boiling point, initial boiling point and boiling range

88 °C

Flammability

Extremely flammable liquid and vapor

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits

Upper:

97.0 vol%

Lower:

2.5 vol%

Flash point

21 °C

Auto-ignition temperature:

no data available

Decomposition temperature:

no data available

pH

no data available

Viscosity (coefficient of viscosity)

no data available

Dynamic viscosity

no data available

Solubilities

water : miscible . Ethanol , ether : soluble .

n-Octanol/water partition coefficient:(log Pow)

-1.05

Vapour pressure

no data available

Specific Gravity / Relative density

0.870 - 0.878 g/mL

Vapour density

1.6

Particle characteristics

no data available

Section 10: STABILITY AND REACTIVITY

Stability

Reactivity no data available
Chemical stability May be altered by light.

Hazardous reactions
 None under normal processing

Conditions to avoid
 Extremes of temperature and direct sunlight, Heat, flames and sparks, static electricity, spark, Shock

Incompatible materials
 Strong oxidizing agents, Strong acids

Hazardous decomposition products
 Carbon monoxide (CO), Carbon dioxide (CO₂), Nitrogen oxides (NO_x)

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Methylhydrazine	32 mg/kg (Rat)	93 mg/kg (Rabbit) 183 mg/kg (Rat)	34 ppm (Rat) 4 h 74 ppm (Rat) 4 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Methylhydrazine	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Chemical Name	Acute toxicity -inhalation vapor- source information	Acute toxicity -inhalation dust- source information	Acute toxicity -inhalation mist- source information
Methylhydrazine	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Methylhydrazine	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Methylhydrazine	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Methylhydrazine	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagenicity source information
Methylhydrazine	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Methylhydrazine	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Methylhydrazine 60-34-4			A3	

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Methylhydrazine	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Methylhydrazine	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Methylhydrazine	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
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Methylhydrazine

Based on the NITE GHS classification results.

Section 12: ECOLOGICAL INFORMATION**Ecotoxicity** No information available**Other data**

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Methylhydrazine	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Persistence and degradability No information available
Bioaccumulative potential No information available
Mobility in soil No information available
Hazard to the ozone layer Based on the NITE GHS Classification results.

Section 13: DISPOSAL CONSIDERATIONS**Waste from residues**

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated container and contaminated packaging

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Section 14: TRANSPORT INFORMATION**ADR/RID**

UN number UN1244
Proper shipping name: Methylhydrazine
UN classification 6.1
Subsidiary hazard class 3, 8
Packing group I
Marine pollutant Yes

IMDG

UN number UN1244
Proper shipping name: Methylhydrazine
UN classification 6.1
Subsidiary hazard class 3, 8
Packing group I
Marine pollutant (Sea) Yes
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information available

IATA

Forbidden
UN number UN1244
Proper shipping name: Methylhydrazine
UN classification 6.1
Subsidiary hazard class 3, 8
Packing group I
Environmentally Hazardous Substance Yes

Section 15: REGULATORY INFORMATIONJapanese regulations

Fire Service Act	Category V, hydrazine derivatives, dangerous grade 2
Poisonous and Deleterious Substances Control Law	Not applicable
Industrial Safety and Health Act	Mutagens - Existing Chemicals Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4) Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57) Notifiable Substances (Law Art.57-2) 【2024.4.1~】Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)
Industrial Safety and Health Act (2024~)	
Regulations for the carriage and storage of dangerous goods in ship	Toxic Substances - Poison (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
Civil Aeronautics Law	Forbidden (Ordinance Art.194)
Pollutant Release and Transfer Register Law	Not applicable
(2023.4.1-)	
Export Trade Control Order	Appendix 1 Export licensed items

Chemical Name	Poisonous and Deleterious Substances Control Law	Industrial Safety and Health Act Substances (Law Art.57-2)	Pollutant Release and Transfer Register Law (2023.4.1-)
Methylhydrazine 60-34-4 (98.0)	-	Applicable	-

Section 16: OTHER INFORMATION

Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)
<http://www.safe.nite.go.jp/japan/db.html>
 IATA dangerous Goods Regulations
 RTECS:Registry of Toxic Effects of Chemical Substances
 Japan Industrial Safety and Health Association GHS Model SDS
 Dictionary of Synthetic Organic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.
 Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
 etc

Record of SDS revisions Disclaimer

The following contents were revised. Regulatory information.

This SDS is according to JIS Z 7253: 2019. The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

GHS Classification is according to JIS Z 7252:2019. *JIS: Japanese Industrial Standards

End of Safety Data Sheet