SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 12-Sep-2024
Revision Number 3.06

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Methylenediphenyl 4,4'-Diisocyanate
Product Code	137-14432,131-14435

Supplier
FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
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Emergency telephone number +81-6-6203-3741 / +81-3-3270-8571

Recommended uses For research use only

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

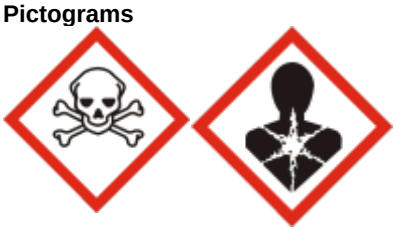
Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Acute toxicity - Inhalation (Dusts/Mists)	Category 2
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2B
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Specific target organ toxicity (single exposure)	Category 1
Category 1 respiratory system	
Specific target organ toxicity (repeated exposure)	Category 1
Category 1 respiratory system	

Pictograms



Signal word Danger

Hazard statements

H315 - Causes skin irritation
H320 - Causes eye irritation
H330 - Fatal if inhaled
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled
H317 - May cause an allergic skin reaction
H370 - Causes damage to the following organs: respiratory system
H372 - Causes damage to the following organs through prolonged or repeated exposure: respiratory system

Precautionary statements-(Prevention)

- Wash face, hands and any exposed skin thoroughly after handling
- Wear protective gloves/protective clothing/eye protection/face protection
- In case of inadequate ventilation wear respiratory protection
- Contaminated work clothing should not be allowed out of the workplace
- Do not breathe dust/fume/gas/mist/vapors/spray

• Do not eat, drink or smoke when using this product

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
• IF ON SKIN: Wash with plenty of soap and water
• Take off contaminated clothing and wash before reuse
• If skin irritation or rash occurs: Get medical advice/attention
• IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
• If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician

Precautionary statements-(Storage)

• Store locked up

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 OCNC6H4CH2C6H4NCO

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Methylenediphenyl 4,4'-Diisocyanate	97.0	250.25	(4)-118	*	101-68-8

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 contaminent and methods and materials for cleaning up

Sweep up and gather scattered particles, and collect it in an empty airtight container.

Recoverly, 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

Avoid contact with 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

Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

Storage

Safe storage conditions

Storage conditions	Keep container protect from light tightly closed. Store in a cool (2-10 °C) place.
Safe packaging material	Glass
Incompatible substances	Strong oxidizing agents

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
Methylenediphenyl 4,4'-Diisocyanate 101-68-8	TWA: 0.05 mg/m³ OEL	N/A	TWA: 0.005 ppm

Personal protective equipment

Respiratory protection	Dust mask (JIS T 8151)
Hand protection	chemical protective gloves (JIS T 8116)
Eye protection	protective eyeglasses or chemical safety goggles (JIS T 8147)
Skin and body protection	Protective gloves

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	White - slightly yellow
Turbidity	(upon melting) clear
Appearance	mass , upon melting liquid
Odor	Pungent odor
Melting point/freezing point	37-40 °C
Boiling point, initial boiling point and boiling range	no data available
Flammability	no data available
Evaporation rate:	no data available
Flammability (solid, gas):	no data available
Upper/lower flammability or explosive limits	
Upper：	no data available
Lower：	no data available
Flash point	>110 °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 : insoluble . benzene , toluene : soluble .
n-Octanol/water partition coefficient:(log Pow)	5.22
Vapour pressure	no data available
Specific Gravity / Relative density	1.180
Vapour density	8.68(air=1)
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

Incompatible materials

Strong oxidizing agents

Hazardous decomposition products

Carbon monooxide (CO), Carbon dioxide (CO2), Nitrogen oxides (NOx)

Section 11: TOXICOLOGICAL INFORMATION

*NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Methylenediphenyl 4,4'-Diisocyanate	= 31600 mg/kg (Rat)	N/A	0.369 mg/L(Rat)

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Methylenediphenyl 4,4'-Diisocyanate	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
Methylenediphenyl 4,4'-Diisocyanate	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
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagencity source information
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH
Methylenediphenyl 4,4'-Diisocyanate 101-68-8	N/A	Group 3	N/A	N/A

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Methylenediphenyl 4,4'-Diisocyanate	Based on the NITE GHS classification results.

Section 12: ECOLOGICAL INFORMATION

*NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput

Ecotoxicity no data 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
Methylenediphenyl 4,4'-Diisocyanate	No data available	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 No information available

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	UN2206
Proper shipping name:	Isocyanates, toxic, n.o.s. (Methylenediphenyl 4,4'-Diisocyanate)
UN classfication	6.1
Subsidiary hazard class	
Packing group	II
Marine pollutant	Not applicable

IMDG

UN number	UN2206
Proper shipping name:	Isocyanates, toxic, n.o.s. (Methylenediphenyl 4,4'-Diisocyanate)
UN classfication	6.1
Subsidiary hazard class	
Packing group	II
Marine pollutant (Sea)	Not applicable
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	No information available

IATA

UN number	UN2206
Proper shipping name:	Isocyanate solution, toxic, n.o.s. (Methylenediphenyl 4,4'-Diisocyanate)
UN classfication	6.1
Subsidiary hazard class	
Packing group	II
Environmentally Hazardous Substance	Not applicable

Section 15: REGULATORY INFORMATION

Japanese regulations

Fire Service Act	Not applicable
Poisonous and Deleterious Substances Control Law	Not applicable
Industrial Safety and Health Act	Mutagens - Existing Chemicals Notifiable Substances (Law Art.57-2) Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)
Industrial Safety and Health Act (2024~)	【2024.4.1~】Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)
Industrial Safety and Health Act (2025~)	【2025.4.1~】Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57) 【2025.4.1~】Notifiable Substances (Law Art.57-2)
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc	Priority Assessment Chemical Substances (Law Article 2, Para.5)
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	Toxic and Infectious Substances (Ordinance Art.194, MITL Nortification for Air Transportation of Explosives etc., Attached Table 1)
Pollutant Release and Transfer Register Law (2023.4.1-)	Class 1

Class 1 - No.	448
Export Trade Control Order	Not applicable
Air Pollution Control Law	Hazardous Air Pollutants

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-)
Methylenediphenyl 4,4'-Diisocyanate 101-68-8 (97.0)	-	Applicable	Applicable

Section 16: OTHER INFORMATION

Key literature references and sources for data etc.

NITE: National Institute of Technology and Evaluation (JAPAN)
https://www.chem-info.nite.go.jp/en/chem/chrip/chrip_search/srhInput
IATA dangerous Goods Regulations
RTECS:Registry of Toxic Effects of Chemical Substances
Japan Industrial Safety and Health Association GHS Model SDS
Dictionary of Synthetic Oraganic Chemistry , SSOCJ, Koudansha Scientific Co.Ltd.
Chemical Dictionary, Kyouritsu Publishing Co., Ltd.
etc

Record of SDS revisions

The following contents were revised. Regulatory information.

Disclaimer

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