

SAFETY DATA SHEET

According to JIS Z 7253:2019
 Revision Date 22-Jan-2021
 Version 3.02

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product name	Nitrobenzene
Product code	141-01707,143-01706,143-01701

Manufacturer	FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-5964
Supplier	FUJIFILM Wako Pure Chemical Corporation 1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan Phone: +81-6-6203-3741 Fax: +81-6-6203-2029
Emergency telephone number	+81-6-6203-3741 / +81-3-3270-8571
Recommended uses and restrictions on use	For research use only

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Flammable liquids	Category 4
Acute toxicity - Oral	Category 4
Acute toxicity - Dermal	Category 3
Acute toxicity - Inhalation (Vapors)	Category 4
Serious eye damage/eye irritation	Category 2B
Carcinogenicity	Category 2
Reproductive Toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1, Category 3
Category 1 nervous system, blood system, liver, Male reproductive system	
Category 3 Narcotic effects	
Specific target organ toxicity (repeated exposure)	Category 1
Category 1 nervous system, blood system, respiratory system, liver, kidneys, Male reproductive organ	
Short-term (acute) hazardous to the aquatic environment	Category 2
Long-term (chronic) hazardous to the aquatic environment	Category 3

Pictograms



Signal word

Danger

Hazard statements

- H227 - Combustible liquid
- H320 - Causes eye irritation
- H302 - Harmful if swallowed
- H311 - Toxic in contact with skin
- H332 - Harmful if inhaled
- H351 - Suspected of causing cancer

H360 - May damage fertility or the unborn child
 H336 - May cause drowsiness or dizziness
 H401 - Toxic to aquatic life
 H412 - Harmful to aquatic life with long lasting effects
 H370 - Causes damage to the following organs: nervous system, blood system, liver, Male reproductive system
 H372 - Causes damage to the following organs through prolonged or repeated exposure: nervous system, blood system, respiratory system, liver, kidneys, Male reproductive organ

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.
- Wash face, hands and any exposed skin thoroughly after handling
- Do not eat, drink or smoke when using this product
- Use only outdoors or in a well-ventilated area
- Do not breathe dust/fume/gas/mist/vapors/spray
- Avoid release to the environment
- Keep away from heat/sparks/open flames/hot surfaces. — No smoking
- Keep cool

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
- Call a POISON CENTER or doctor/physician if you feel unwell.
- Remove/Take off immediately all contaminated clothing
- Wash contaminated clothing before reuse.
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- Call a POISON CENTER or doctor/physician if you feel unwell.
- IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- Rinse mouth.
- In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary statements-(Storage)

- Store locked up.
- Store in a well-ventilated place. Keep container tightly closed

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 C₆H₅NO₂

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Nitrobenzene	99.5	123.11	(3)-436	公表	98-95-3

Impurities and/or Additives : Not applicable

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**

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

Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.

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

Keep container protect from light, store in well-ventilated place at room temperature (preferably cool). Keep container tightly closed. Store locked up.

Safe packaging material

Glass, Iron

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
Nitrobenzene 98-95-3	TWA: 1 ppm OEL TWA: 5 mg/m ³ OEL Skin	N/A	TWA: 1 ppm Skin

Personal protective equipment

Respiratory protection Protective mask
Hand protection Protective gloves
Eye protection protective eyeglasses or chemical safety goggles
Skin and body protection Long-sleeved work clothes

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Form

Color Colorless - pale yellow
Turbidity clear
Appearance liquid

Odor

characteristic odor

Melting point/freezing point

6 °C

Boiling point, initial boiling point and boiling range

210 °C

Flammability

Combustible liquid

Evaporation rate:

No data available

Flammability (solid, gas):

No data available

Upper/lower flammability or explosive limits

Upper : 40 vol%

Lower : 1.8 vol%

Flash point

88 °C

Auto-ignition temperature:

480 °C

Decomposition temperature:

No data available

pH

No data available

Viscosity (coefficient of viscosity)

No data available

Dynamic viscosity

No data available

Solubilities

Ethanol , Diethyl ether : Very soluble. water : practically insoluble, or insoluble .

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

1.86

Vapour pressure

No data available

Specific Gravity / Relative density

1.201 - 1.207 g/mL

Vapour density

No data available

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

Incompatible materials

Strong oxidizing agents

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
Nitrobenzene	349 mg/kg (rat)	560 - 760 mg/kg (rabbit)	556 ppm (rat) 4 h

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

Serious eye damage/ irritation

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

Respiratory or skin sensitization

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

Reproductive cell mutagenicity

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

Carcinogenicity

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

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Nitrobenzene 98-95-3	Reasonably Anticipated	Group 2B	A3	Group 2B

Reproductive toxicity

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Nitrobenzene	Based on the NITE GHS classification results.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Nitrobenzene	EC50:Pseudokirchneriella	LC50:Poecilia reticulata	LC50 : Mysidopsis bahia

	<i>subcapitata</i> 3.45 - 38.13 mg/L 96 h static EC50: <i>Pseudokirchneriella</i> <i>subcapitata</i> 36 - 88.8 mg/L 72 h static EC50: <i>Pseudokirchneriella</i> <i>subcapitata</i> 44.1 mg/L 96 h	121 - 150 mg/L 96 h LC50: <i>Lepomis macrochirus</i> 36 - 49 mg/L 96 h LC50: <i>Pimephales promelas</i> 40.49 - 47.51 mg/L 96 h LC50: <i>Brachydanio rerio</i> 92.2 mg/L 96 h	6.68 mg/L 96 h
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Other data

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Nitrobenzene	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	No information available
Mobility	

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	UN1662
Proper shipping name:	Nitrobenzene
UN classification	6.1
Subsidiary hazard class	
Packing group	II
Marine pollutant	Not applicable

IMDG

UN number	UN1662
Proper shipping name:	Nitrobenzene
UN classification	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	UN1662
Proper shipping name:	Nitrobenzene
UN classification	6.1
Subsidiary hazard class	
Packing group	II
Environmentally Hazardous Substance	Not applicable

Section 15: REGULATORY INFORMATION

International Inventories

EINECS/ELINCS	Listed
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TSCA Listed

Japanese regulations

Fire Service Act Category IV, Class III petroleums, dangerous grade 3

Poisonous and Deleterious Substances Control Law Deleterious Substances 2nd. Grade

Industrial Safety and Health Act Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57, Para.1, Enforcement Order Art.18)
Notifiable Substances (Law Art.57-2, Enforcement Order Art.18-2 Attached Table No.9)No.428

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 Notification for Air Transportation of Explosives etc., Attached Table 1)

Marine Pollution Prevention Law Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y

Pollutant Release and Transfer Register Law Class 1

Class 1 - No. 316

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
Nitrobenzene 98-95-3 (99.5)	Applicable	Applicable	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

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 Z7252(2019). *JIS: Japanese Industrial Standards

End of Safety Data Sheet