

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision Date 03-Jun-2020
 Version 2.01

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product name	Chloroform
Product code	036-02607,038-02601,038-02606,034-02603,034-02608

Manufacturer FUJIFILM Wako Pure Chemical Corporation
 1-2 Doshomachi 3-Chome
 Chuo-ku, Osaka 540-8605, Japan
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Recommended uses and restrictions on use For research purposes

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Acute toxicity - Oral	Category 4
Acute toxicity - Inhalation (Vapors)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Germ cell mutagenicity	Category 2
Carcinogenicity	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 1, Category 3
Category 1 respiratory system, cardiovascular system, liver, kidneys	
Category 3 Narcotic effects	
Specific target organ toxicity (repeated exposure)	Category 1
Category 1 central nervous system, respiratory system, liver, kidneys	
Short-term (acute) hazardous to the aquatic environment	Category 3
Long-term (chronic) hazardous to the aquatic environment	Category 1

Pictograms



Signal word

Danger

Hazard statements

- H315 - Causes skin irritation
- H318 - Causes serious eye damage
- H302 - Harmful if swallowed
- H332 - Harmful if inhaled
- H341 - Suspected of causing genetic defects
- H351 - Suspected of causing cancer

H361 - Suspected of damaging fertility or the unborn child
 H336 - May cause drowsiness or dizziness
 H402 - Harmful to aquatic life
 H410 - Very toxic to aquatic life with long lasting effects
 H370 - Causes damage to the following organs: respiratory system, cardiovascular system, liver, kidneys
 H372 - Causes damage to the following organs through prolonged or repeated exposure: central nervous system, respiratory system, liver, kidneys

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

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.
- Immediately call a POISON CENTER or doctor/physician
- IF ON SKIN: Wash with plenty of soap and water
- If skin irritation occurs: Get medical advice/attention
- Take off contaminated clothing and wash 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.
- Collect spillage

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 Mixture

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Chloroform	99.0	119.38	(2)-37	公表	67-66-3
Ethanol	<1.0	46.07	(2)-202	公表	64-17-5

Impurities and/or Additives : Ethanol < 1% (Stabilizer)

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

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

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**

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, 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, Strong bases

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
Chloroform 67-66-3	TWA: 3 ppm OEL TWA: 14.7 mg/m ³ OEL Skin ISHL/ACL: 3 ppm	ISHL/ACL: 3 ppm	TWA: 10 ppm
Ethanol 64-17-5	N/A	N/A	STEL: 1000 ppm

Personal protective equipment

Respiratory protection gas mask for organic gas
Hand protection Impermeable protective gloves
Eye protection protective eyeglasses or chemical safety goggles
Skin and body protection Long-sleeved work clothes, protective boots

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES**Form**

Color colorless

Turbidity clear

Appearance liquid

Odor

characteristic odor

Melting point/freezing point

-64 °C

Boiling point, initial boiling point and boiling range

61 °C

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

No data available

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

Ethanol and Diethyl ether : Very soluble. water : slightly soluble

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

1.97

Vapour pressure

No data available

Specific Gravity / Relative density

1.474 - 1.491g/mL

Vapour density

4.01 (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

Coexisting with water for a long time, it hydrolyzes to produce hydrochloric acid.

Conditions to avoid

Extremes of temperature and direct sunlight

Incompatible materials

Strong oxidizing agents, Strong bases

Hazardous decomposition productsCarbon monoxide (CO), Carbon dioxide (CO₂), Phosgene, Chlorine, Hydrogen chloride (HCl) gas, Halides**Section 11: TOXICOLOGICAL INFORMATION****Acute toxicity**

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Chloroform	695 mg/kg (Rat)	> 20 g/kg (Rabbit)	9,636 ppm /4h (Rat)
Ethanol	6200 mg/kg(rat)	20000 mg/kg (rabbit)	63000 ppmV (rat) 4h

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

Serious eye damage/ irritation

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

Respiratory or skin sensitization

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

Reproductive cell mutagenicity

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

Carcinogenicity

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

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
Chloroform 67-66-3	Reasonably Anticipated	Group 2A Group 2B Group 3	A3	Group 2B
Ethanol 64-17-5	Known	Group 1	A3	-

Reproductive toxicity

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

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

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

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Chloroform	EC50 : 13.3 mg/L 72h (<i>Chlamydomonas angulosa</i>)	LC50: <i>Lepomis macrochirus</i> 18 mg/L 96 h LC50: <i>Oncorhynchus mykiss</i> 18 mg/L 96 h LC50: <i>Poecilia reticulata</i> 300 mg/L 96 h LC50: <i>Pimephales promelas</i> 71 mg/L 96 h	EC50: <i>Daphnia magna</i> 29 mg/L 48 h
Ethanol	EC50: <i>Chlorella alga</i> 1000 mg/L 96 h	LC50: <i>Oncorhynchus mykiss</i> 11200ppm 96h	EC50: <i>Daphnia magna</i> 5463mg/L 48 h

Other data

Chemical Name	Short-term (acute) hazardous to the aquatic environment source information	Long-term (chronic) hazardous to the aquatic environment source information
Chloroform	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Ethanol	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	UN1888
Proper shipping name:	Chloroform
UN classification	6.1
Subsidiary hazard class	
Packing group	III
Marine pollutant	Yes

IMDG

UN number	UN1888
Proper shipping name:	Chloroform
UN classification	6.1
Subsidiary hazard class	
Packing group	III
Marine pollutant (Sea)	Yes
Transport in bulk according to	No information available

Annex II of MARPOL 73/78 and
the IBC Code

IATA

UN number	UN1888
Proper shipping name:	Chloroform
UN classification	6.1
Subsidiary hazard class	
Packing group	III
Environmentally Hazardous Substance	Yes

Section 15: REGULATORY INFORMATION

International Inventories

EINECS/ELINCS	-
TSCA	-

Japanese regulations

Fire Service Act	Firefighting Inhibitor
Poisonous and Deleterious Substances Control Law	Deleterious Substances 3rd. 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) Group 2 Specified Chemical Substance Substances with Health Hazards Prevention Guideline(Carcinogenicity Substance) Notifiable Substances (Law Art.57-2, Enforcement Oder Art.18-2 Attached Table No.9)No.160,61 Working Environment Evaluation Standards, Administrative Control Levels (Law Art.65-2, Para.1) Priority Assessment Chemical Substances (Law Article 2, Para.5)
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc	
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)
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.	127
Water Pollution Control Act	Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3)
Export Trade Control Order	Not applicable
Air Pollution Control Law	Priority Chemical Substances

Chemical Name	Poisonous and Deleterious Substances Control Law	Industrial Safety and Health Act Substances (Law Art.57-2)	Pollutant Release and Transfer Register Law
Chloroform 67-66-3 (99.0)	Applicable	Applicable	Applicable
Ethanol 64-17-5 (<1.0)	-	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

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