

SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 03-Oct-2023
 Revision Number 2.05

Section 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---------------------|----------------------------------|
| Product Name | Trichloroethylene(no stabilizer) |
| Product Code | 206-18575,202-18577 |

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

| | |
|--|------------------------|
| Acute toxicity - Inhalation (Vapors) | Category 4 |
| Skin corrosion/irritation | Category 2 |
| Serious eye damage/eye irritation | Category 2A |
| Skin sensitization | Category 1 |
| Germ cell mutagenicity | Category 2 |
| Carcinogenicity | Category 1A |
| Reproductive Toxicity | Category 2 |
| Specific target organ toxicity (single exposure) | Category 1, Category 3 |
| Category 1 central nervous system | |
| Category 3 Respiratory irritation, Narcotic effects | |
| Specific target organ toxicity (repeated exposure) | Category 1 |
| Category 1 central nervous system, liver | |
| Acute aquatic toxicity | Category 2 |

Pictograms



Signal word Danger

Hazard statements

- H315 - Causes skin irritation
- H319 - Causes serious eye irritation
- H332 - Harmful if inhaled
- H341 - Suspected of causing genetic defects
- H350 - May cause cancer
- H361 - Suspected of damaging fertility or the unborn child
- H335 - May cause respiratory irritation
- H336 - May cause drowsiness or dizziness
- H317 - May cause an allergic skin reaction
- H401 - Toxic to aquatic life
- H370 - Causes damage to the following organs: central nervous system

H372 - Causes damage to the following organs through prolonged or repeated exposure: central nervous system, liver

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
- Contaminated work clothing should not be allowed out of the workplace
- Wear protective gloves
- 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
- Use only outdoors or in a well-ventilated area
- 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
- If eye irritation persists: Get medical advice/attention
- Take off contaminated clothing and wash before reuse
- IF ON SKIN: Wash with plenty of soap and water
- If skin irritation or rash occurs: Get medical advice/attention
- 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

Precautionary statements-(Storage)

- Store in a well-ventilated place. Keep container tightly closed
- 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 ClCH:CCl2

| Chemical Name | Weight-% | Molecular weight | ENCS | ISHL No. | CAS RN |
|-------------------|----------|------------------|-------|----------|---------|
| Trichloroethylene | 98.0 | 131.39 | 2-105 | * | 79-01-6 |

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

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

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. Avoid contact with strong bases. 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

Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity) 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.

Safe packaging material

Glass, Iron

Incompatible substances

Oxidizers, 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 |
|------------------------------|-----------------------------|------------------|-----------------------------|
| Trichloroethylene 79-01-6 | 25ppm, 135mg/m ³ | ISHL/ACL: 10 ppm | STEL: 25 ppm TWA: 10 ppm |

Personal protective equipment

| | |
|---------------------------------|--|
| Respiratory protection | Protective mask |
| Hand protection | chemical protective gloves (JIS T 8116) |
| 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

Turbidity clear

Appearance liquid

Odor

characteristic odor

Melting point/freezing point

-73 °C

Boiling point, initial boiling point and boiling range

87 °C

Flammability

no data available

Evaporation rate:

no data available

Flammability (solid, gas):

no data available

Upper/lower flammability or explosive limits

Upper: 10.5 vol%

Lower: 8 vol%

Flash point

no data available

Auto-ignition temperature:

410 °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 : slightly soluble .

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

2.42

Vapour pressure

7.8 kPa (20°C)

Specific Gravity / Relative density

1.461 – 1.469 g/m L (20 °C)

Vapour density

4.5

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

Oxidizers, Strong bases

Hazardous decomposition products

Carbon monoxide (CO), Carbon dioxide (CO₂), Halides

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

| Chemical Name | Oral LD50 | Dermal LD50 | Inhalation LC50 |
|-------------------|--|--|---------------------|
| Trichloroethylene | 4920 mg/kg (Rat) 4290 mg/kg (Rat) | > 20 g/kg (Rabbit) 29000 mg/kg (Rabbit) | 26 mg/L (Rat) 4 h |

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

Serious eye damage/ irritation

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

Respiratory or skin sensitization

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

Reproductive cell mutagenicity

| Chemical Name | germ cell mutagenicity source information |
|-------------------|---|
| Trichloroethylene | Based on the NITE GHS classification results. |

Carcinogenicity

| Chemical Name | Carcinogenicity source information |
|-------------------|---|
| Trichloroethylene | Based on the NITE GHS classification results. |

| Chemical Name | NTP | IARC | ACGIH | JSOH (Japan) |
|------------------------------|------------------------------------|--------------------|-------|--------------|
| Trichloroethylene 79-01-6 | Known Reasonably Anticipated | Group 1 Group 3 | A2 | Group 1 |

Reproductive toxicity

| Chemical Name | Reproductive toxicity source information |
|-------------------|---|
| Trichloroethylene | Based on the NITE GHS classification results. |

STOT-single exposure

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

STOT-repeated exposure

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

Aspiration hazard

| Chemical Name | Aspiration Hazard source information |
|-------------------|---|
| Trichloroethylene | Based on the NITE GHS classification results. |

Section 12: ECOLOGICAL INFORMATION**Ecotoxicity**

| Chemical Name | Algae/aquatic plants | Fish | Crustacea |
|-------------------|---|--|-------------------------------------|
| Trichloroethylene | EC50:Pseudokirchneriella subcapitata 175 mg/L 96 h EC50:Desmodemus subspicatus 450 mg/L 96 h | LC50 : Pimephales promelas 31.4 - 71.8 mg/L 96 h LC50 : Lepomis macrochirus 39 - 54 mg/L 96 h | EC50:Daphnia magna 2.2 mg/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 |
|-------------------|--|---|
| Trichloroethylene | Based on the NITE GHS classification results. | Based on the NITE GHS classification results. |

| | |
|--------------------------------------|---|
| Persistence and degradability | Degree of decomposition: 2.4 % by BOD (METI Existing chemical safety inspections) |
| Bioaccumulative potential | Bioaccumulative potential |
| 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 | UN1710 |
| Proper shipping name: | Trichloroethylene |
| UN classification | 6.1 |
| Subsidiary hazard class | |
| Packing group | III |
| Marine pollutant | Not applicable |

IMDG

| | |
|---|--------------------------|
| UN number | UN1710 |
| Proper shipping name: | Trichloroethylene |
| UN classification | 6.1 |
| Subsidiary hazard class | |
| Packing group | III |
| 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 | UN1710 |
| Proper shipping name: | Trichloroethylene |
| UN classification | 6.1 |
| Subsidiary hazard class | |
| Packing group | III |
| 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 | 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.384 Group 2 Specified Chemical Substance Substances with Health Hazards Prevention Guideline(Carcinogenicity Substance) |

| | |
|--|---|
| Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc | Working Environment Evaluation Standards, Administrative Control Levels (Law Art.65-2, Para.1) |
| Regulations for the carriage and storage of dangerous goods in ship | Class II Specified Chemical Substances (Law Art.2, Para.3, Enforcement Order Art.1-2) |
| Civil Aeronautics Law | Toxic Substances - Poison (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1) |
| Marine Pollution Prevention Law | Toxic and Infectious Substances (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1) |
| Pollutant Release and Transfer Register Law (2023.4.1-) | Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y |
| Specified Class 1-No. | Specified Class 1 No. |
| Water Pollution Control Act | 281 Harmful Substances (Law Art.2, Enforcement Order Art.2, Ordinance Designating Wastewater Standards Art.1) |
| Export Trade Control Order | Not applicable |
| Air Pollution Control Law | Priority Chemical Substances, Designated Chemical Substances |
| Soil Contamination Control Law | Designated Hazardous 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 (2023.4.1-) |
|---------------------------------------|--|--|---|
| Trichloroethylene 79-01-6 (98.0) | - | 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 Z 7252:2019. *JIS: Japanese Industrial Standards

End of Safety Data Sheet