

# SAFETY DATA SHEET

According to JIS Z 7253:2019  
**Revision date** 22-Feb-2024  
 Revision Number 2.05

## Section 1: PRODUCT AND COMPANY IDENTIFICATION

<b>Product Name</b>	Carnoy Solution
<b>Product Code</b>	034-17711

**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**

<b>Flammable liquids</b>	Category 3
<b>Acute toxicity - Oral</b>	Category 4
<b>Skin corrosion/irritation</b>	Category 1
<b>Serious eye damage/eye irritation</b>	Category 1
<b>Germ cell mutagenicity</b>	Category 2
<b>Carcinogenicity</b>	Category 1A
<b>Reproductive Toxicity</b>	Category 1A
<b>Specific target organ toxicity (single exposure)</b>	Category 1, Category 3
<b>Category 1</b> respiratory system, cardiovascular system, liver, kidneys, blood	
<b>Category 3</b> Respiratory irritation, Narcotic effects	
<b>Specific target organ toxicity (repeated exposure)</b>	Category 1
<b>Category 1</b> liver, central nervous system, respiratory system, kidneys	
<b>Acute aquatic toxicity</b>	Category 3
<b>Chronic aquatic toxicity</b>	Category 1

**Pictograms**



**Signal word**

Danger

**Hazard statements**

- H226 - Flammable liquid and vapour
- H314 - Causes severe skin burns and eye damage
- H318 - Causes serious eye damage
- H302 - Harmful if swallowed
- H341 - Suspected of causing genetic defects
- H350 - May cause cancer
- H360 - May damage fertility or the unborn child
- H335 - May cause respiratory irritation
- 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, blood

H372 - Causes damage to the following organs through prolonged or repeated exposure: liver, central nervous system, respiratory system, 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
- Do not breathe dust/fume/gas/mist/vapors/spray
- Use only outdoors or in a well-ventilated area
- 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
- Keep cool

#### Precautionary statements-(Response)

- 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 (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- 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
- Do NOT induce vomiting
- 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 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
Ethanol	60	46.07	(2)-202	*	64-17-5
Chloroform	30	119.38	2-37	*	67-66-3
Acetic Acid	10	60.05	(2)-688	*	64-19-7

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 (CO<sub>2</sub>), 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. Vapors may form explosive mixtures with air

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

**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

**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
Ethanol 64-17-5	N/A	N/A	STEL: 1000 ppm
Chloroform 67-66-3	TWA: 3 ppm OEL TWA: 14.7 mg/m <sup>3</sup> OEL Skin ISHL/ACL: 3 ppm	ISHL/ACL: 3 ppm	TWA: 10 ppm
Acetic Acid 64-19-7	TWA: 10 ppm OEL TWA: 25 mg/m <sup>3</sup> OEL	N/A	STEL: 15 ppm TWA: 10 ppm

**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

**Turbidity**

clear

**Appearance**

liquid

**Odor**

no data available

**Melting point/freezing point**

no data available

**Boiling point, initial boiling point and boiling range**

no data available

**Flammability**

Flammable liquid and vapor

**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**

acidic

**Viscosity (coefficient of viscosity)**

no data available

**Dynamic viscosity**

no data available

**Solubilities**

water , Ethanol and acetone : soluble .

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

no data available

Vapour pressure	no data available
Specific Gravity / Relative density	no data available
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 (CO <sub>2</sub> ), Halides

## Section 11: TOXICOLOGICAL INFORMATION

### Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Ethanol	6200 mg/kg ( Rat )	20000 mg/kg ( Rabbit )	63000 ppmV ( Rat ) 4 h
Chloroform	908 mg/kg ( Rat )	> 3980 mg/kg ( Rabbit )	11.3 g/m <sup>3</sup> ( Rat ) 4 h
Acetic Acid	3310 mg/kg ( Rat )	1060 mg/kg ( Rabbit )	N/A

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

### Serious eye damage/ irritation

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

### Respiratory or skin sensitization

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

Chloroform	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.

**Reproductive cell mutagenicity**

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

**Carcinogenicity**

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

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

**Reproductive toxicity**

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

**STOT-single exposure**

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

**STOT-repeated exposure**

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

**Aspiration hazard**

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

## Section 12: ECOLOGICAL INFORMATION

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Ethanol	EC50 : <i>Chlorella alga</i> 1000 mg/L 96 h	LC50 : <i>Oncorhynchus mykiss</i> 11200 ppm 96 h	EC50 : <i>Daphnia magna</i> 5463 mg/L 48 h
Chloroform	EC50 : <i>Chlamydomonas angulosa</i> 13.3 mg/L 72 h	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
Acetic Acid	N/A	LC50 : <i>Pimephales promelas</i> 79 mg/L 96 h	EC50 : <i>Daphnia magna</i> 65000 ug/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
Ethanol	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Chloroform	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Acetic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

<b>Persistence and degradability</b>	No information available
<b>Bioaccumulative potential</b>	No information available
<b>Mobility in soil</b>	No information available
<b>Hazard to the ozone layer</b>	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**

<b>UN number</b>	UN2924
<b>Proper shipping name:</b>	Flammable liquid, corrosive, n.o.s. (Ethanol / Acetic Acid mixture)
<b>UN classification</b>	3
<b>Subsidiary hazard class</b>	8
<b>Packing group</b>	III
<b>Marine pollutant</b>	Yes

**IMDG**

<b>UN number</b>	UN2924
<b>Proper shipping name:</b>	Flammable liquid, corrosive, n.o.s. (Ethanol / Acetic Acid mixture)
<b>UN classification</b>	3
<b>Subsidiary hazard class</b>	8
<b>Packing group</b>	III
<b>Marine pollutant (Sea)</b>	Yes
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	No information available

**IATA**

<b>UN number</b>	UN2924
<b>Proper shipping name:</b>	Flammable liquid, corrosive, n.o.s. (Ethanol / Acetic Acid mixture)
<b>UN classification</b>	3
<b>Subsidiary hazard class</b>	8
<b>Packing group</b>	III
<b>Environmentally Hazardous Substance</b>	Yes

### Section 15: REGULATORY INFORMATION

**Japanese regulations**

<b>Fire Service Act</b>	Category IV, Class II petroleums, dangerous grade 3
<b>Poisonous and Deleterious Substances Control Law</b>	Not applicable
<b>Industrial Safety and Health Act</b>	Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)

	Notifiable Substances (Law Art.57-2) Group 2 Specified Chemical Substance Substances with Health Hazards Prevention Guideline(Carcinogenicity Substance) Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4)
<b>Industrial Safety and Health Act (2024-)</b>	<b>【2024.4.1~】</b> Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1)
<b>Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc</b>	Priority Assessment Chemical Substances (Law Article 2, Para.5)
<b>Regulations for the carriage and storage of dangerous goods in ship</b>	Flammable Liquids (Ordinance Art.3, Ministry of Transportation Ordinance Regarding Transport by Ship and Storage, Attached Table 1)
<b>Civil Aeronautics Law</b>	Flammable Liquids (Ordinance Art.194, MITL Notification for Air Transportation of Explosives etc., Attached Table 1)
<b>Marine Pollution Prevention Law</b>	Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y
<b>Pollutant Release and Transfer Register Law (2023.4.1-)</b>	Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Z Class 1
<b>Class 1 - No.</b>	127
<b>Water Pollution Control Act</b>	Specified substances(Law Art.2 Para.4, Enforcement Order Art.3-3)
<b>Export Trade Control Order</b>	Not applicable
<b>Air Pollution Control Law</b>	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 (2023.4.1-)
Ethanol 64-17-5 ( 60 )	-	Applicable	-
Chloroform 67-66-3 ( 30 )	-	Applicable	Applicable
Acetic Acid 64-19-7 ( 10 )	-	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**