



SAFETY DATA SHEET

According to JIS Z 7253:2019 Issue Date 19-Aug-2025 Revision Number 1.01

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	26 PFCs Mixture Standard Solution (each 2µg/mL)
Product Code	163-29861,169-29863

FUJIFILM Wako Pure Chemical Corporation **Supplier**

1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan

Phone: +81-6-6203-3741 Fax: +81-6-6203-2029

+81-6-6203-3741 / +81-3-3270-8571 **Emergency telephone number**

Recommended uses For research use only

Reference material (as defined in Japanese Industrial Standards (JIS) Q0030) Seek expert judgment when using for purposes other than those recommended. Restrictions on use

Section 2: HAZARDS IDENTIFICATION

GHS classification

Classification of the substance or mixture

Flammable liquids Category 2 **Acute toxicity - Oral** Category 4 Serious eye damage/eye irritation Category 2A **Reproductive Toxicity** Category 1B Category 1, Category 3

Specific target organ toxicity (single exposure)

Category 1 central nervous system, Visual organ, systemic toxicity

Category 3 Narcotic effects

Specific target organ toxicity (repeated exposure)

Category 1 central nervous system, Visual organ, blood system

Category 2 respiratory system, liver, spleen





Signal word

Hazard statements

H225 - Highly flammable liquid and vapor

H319 - Causes serious eye irritation

H302 - Harmful if swallowed

H360 - May damage fertility or the unborn child

H336 - May cause drowsiness or dizziness

H370 - Causes damage to the following organs: central nervous system, Visual organ, systemic toxicity

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

organ, blood system

H373 - May cause damage to the following organs through prolonged or repeated exposure: respiratory system, liver, spleen

Precautionary statements-(Prevention)

Category 1, Category 2

- · 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
- 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 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 (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- 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 suitable extinguishing media 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 Mixture

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Methanol	95.04	32.04	2-201	*	67-56-1
2-Propanol	4.96	60.10	(2)-207	2-(8)-319	67-63-0
Perfluorohexadecanoic Acid	0.00025	814.13	(2)-2658	*	67905-19-5
(Z)-2H-Perfluoro-2-dece noic Acid	0.00025	N/A	N/A	N/A	70887-84-2
Perfluorotridecanoic Acid	0.00025	664.11	(2)-2659,(2)-2658	(2)-2659,(2)-2658	72629-94-8
1,1,2,2,3,3,4,4,5,5,6,6,7, 7,8,8,8-Heptadecafluoro- 1-octanesulfonamide	0.00025	499.14	N/A	2-(6)-530	754-91-6
1H,1H,2H,2H-Perfluoroh exylsulfonic Acid	0.00025	328.15	N/A	N/A	757124-72-4
Perfluoro-4-methoxybuta noic Acid	0.00025	280.05	N/A	N/A	863090-89-5
Perfluoro(2-ethoxyethan e)sulfonic Acid	0.00025	316.10	N/A	N/A	113507-82-7
Perfluoro(2-methyl-3-oxa hexanoic) Acid	0.00025	330.05	N/A	2-(4)-1175	13252-13-6
Perfluoroundecanoic acid	0.00025	564.09	(2)-2658,(2)-1182	*	2058-94-8
Perfluoropentanoic acid	0.00025	264.05	N/A	N/A	2706-90-3
Perfluoropentanesulfonic	0.00025	350.10	N/A	2-(4)-774	2706-91-4

Acid Hydrate					
1H,1H,2H,2H-Perfluoroo ctanesulfonic Acid	0.00025	428.17	(2)-3480	2-(4)-870	27619-97-2
N-Ethylperfluoro-1-octan esulfonamidoacetic Acid	0.00025	585.23	(2)-2816	*	2991-50-6
Undecafluorohexanoic Acid	0.00025	314.05	N/A	2-1182	307-24-4
Tricosafluorododecanoic Acid	0.00025	614.10	(2)-2659,(2)-2658	*	307-55-1
N-Methylperfluorooctane sulfonamide	0.00025	513.17	N/A	2-(6)-594	31506-32-8
Nonadecafluorodecanoic Acid	0.00025	514.08	(2)-2659,(2)-1182	*	335-76-2
Perfluorodecanesulfonic Acid	0.00025	600.14	N/A	N/A	335-77-3
Heptafluorobutyric acid	0.00025	214.04	N/A	(2)-1182	375-22-4
1,1,2,2,3,3,4,4,4-Nonaflu oro-1-butanesulfonic Acid	0.00025	300.10	N/A	2-(4)-774	375-73-5
Tridecafluoroheptanoic Acid	0.00025	364.06	(2)-1182	*	375-85-9
Perfluoroheptanesulfonic Acid Standard	0.00025	450.12	N/A	2-(4)-774	375-92-8
Perfluorononan-1-oic acid	0.00025	464.08	(2)-1182	*	375-95-1
Perfluorotetradecanoic acid	0.00025	714.11	(2)-2658	*	376-06-7
Perfluoro-3-methoxyprop anoic Acid	0.00025	230.04	N/A	N/A	377-73-1
1H,1H,2H,2H-Perfluorod ecanesulfonic Acid	0.00025	528.18	(2)-3480	2-(4)-1093 2-(4)-870	39108-34-4

Note on ISHL No.:

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

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. Vapors may form explosive mixtures

^{*} in the table means announced chemical substances.

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 contaminent and methods and materials for cleaning up

Absorb dry sand, earth, sawdust and the waste. Collect empty container that can be sealed.

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

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.Use with local exhaust ventilation. To cut with care and wear protective gloves and protective goggles to ampoule time of the opening (Cutting method to check the label). 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 Packed with an inert gas. Container protected from light, and store tightly closed in

freezer (-20°C).

Safe packaging material

Ampoule

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 handand eye-wash facility. And display their position clearly.

Exposure limits

	Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
	Methanol	200ppm(260 mg/m ³)	200ppm	TWA 200ppm(260mg/m ³)
	67-56-1			STEL 250ppm
Ī	2-Propanol	400ppm(980 mg/m ³)	ISHL/ACL: 200 ppm	STEL: 400 ppm

67-63-0		TWA: 200 ppm

Personal protective equipment

Respiratory protection gas mask for organic gas (JIS T 8152) **Hand protection** gas mask for organic gas (JIS T 8152) 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

Data except for the appearance is described as Methanol.

Form

ColorcolorlessTurbidityclearAppearanceliquid

Odor characteristic odor

Melting point/freezing point -98 °C
Boiling point, initial boiling point and boiling range 64 °C

Flammability Highly flammable liquid and vapor

Evaporation rate:no data available
Flammability (solid, gas):
no data available

Upper/lower flammability or explosive limits

Upper:36.5 vol%Lower:6.0 vol%Flash point11 °CAuto-ignition temperature:464 °C

Decomposition temperature:no data availablepHno data availableViscosity (coefficient of viscosity)no data availableDynamic viscosityno data available

Solubilities water , Ethanol , acetone : Very soluble .

n-Octanol/water partition coefficient:(log Pow) no data available

Vapour pressure -0.74

Specific Gravity / Relative density
Vapour density

Particle characteristics

0.789-0.792 g/mL
no data available
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

Nitrogen oxides (NOx), Sulfur oxides (SOx), Halides, Carbon monooxide (CO), Carbon dioxide (CO2)

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
Methanol	1400 mg/kg (Human)	15800 mg/kg (Rabbit)	>31500 ppm (Rat) 4 h
			(vapor)
2-Propanol	4384 mg/kg (Rat)	12870 mg/kg (Rabbit)	27908 ppmV (Rat) 4 h
1,1,2,2,3,3,4,4,5,5,6,6,7,7,8,8, 8-Heptadecafluoro-1-octanesul fonamide		N/A	N/A
Nonadecafluorodecanoic Acid	57 mg/kg (Rat)	N/A	N/A
1,1,2,2,3,3,4,4,4-Nonafluoro-1- butanesulfonic Acid	430 mg/kg (Rat)	N/A	N/A

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Methanol			Based on the NITE GHS classification results.
2-Propanol			Based on the NITE GHS classification results.
Tricosafluorododecanoic Acid			Based on the NITE GHS classification results.
Perfluorononan-1-oic acid			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
Methanol	Based on the NITE GHS	Based on the NITE GHS	Based on the NITE GHS
	classification results.	classification results.	classification results.
2-Propanol	Based on the NITE GHS	Based on the NITE GHS	Based on the NITE GHS
•	classification results.	classification results.	classification results.
Tricosafluorododecanoic Acid	Based on the NITE GHS	Based on the NITE GHS	Based on the NITE GHS
	classification results.	classification results.	classification results.
Perfluorononan-1-oic acid	Based on the NITE GHS	Based on the NITE GHS	Based on the NITE GHS
	classification results.	classification results.	classification results.

Skin irritation/corrosion

Chemical Name	Skin corrosion/irritation source information
Methanol	Based on the NITE GHS classification results.
2-Propanol	Based on the NITE GHS classification results.
Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Methanol	Based on the NITE GHS classification results.
2-Propanol	Based on the NITE GHS classification results.
Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Methanol	Based on the NITE GHS classification results.
2-Propanol	Based on the NITE GHS classification results.
Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

toproductive con matagementy		
Chemical Name	germ cell mutagencity source information	
Methanol	Based on the NITE GHS classification results.	
2-Propanol	Based on the NITE GHS classification results.	
Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.	
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.	

Carcinogenicity

Chemical Name	Carcinogenicity source information	
Methanol	Based on the NITE GHS classification results.	
2-Propanol	Based on the NITE GHS classification results.	
Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.	
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.	

Chemical Name	NTP	IARC	ACGIH	JSOH
2-Propanol	N/A	Group 3	N/A	-
67-63-0		·		

Reproductive toxicity

Chemical Name		Reproductive toxicity source information
	Methanol	Based on the NITE GHS classification results.
	2-Propanol	Based on the NITE GHS classification results.
	Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid		Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information	
Methanol	Based on the NITE GHS classification results.	
2-Propanol	Based on the NITE GHS classification results.	
Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.	
Perfluorononan-1-oic acid Based on the NITE GHS classification results.		

STOT-repeated exposure

O : O : I : O D O CALLO CO CALLO CAL	
Chemical Name	STOT -repeated exposure- source information
Methanol	Based on the NITE GHS classification results.
2-Propanol	Based on the NITE GHS classification results.
Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Methanol	Based on the NITE GHS classification results.
2-Propanol	Based on the NITE GHS classification results.
Tricosafluorododecanoic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	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

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Methanol	N/A	LC50 : Lepomis macrochirus	LC50 : Artemia
		15400 mg/L 96 h	1340 mg/L 96 h
2-Propanol	ErC50 : Pseudokirchneriella subcapitata > 1000 mg/L 72 h	LC50 : Orange-red Killish > 100 mg/L 96 h	EC50 : Daphinia magna > 1000 mg/L 48 h

Other data

Chemical Name	Short-term (acute) hazardous to the	Long-term (chronic) hazardous to the
	aquatic environment source information	aquatic environment source information
Methanol	Based on the NITE GHS classification	Based on the NITE GHS classification
	results.	results.
2-Propanol	Based on the NITE GHS classification	Based on the NITE GHS classification
	results.	results.
Tricosafluorododecanoic Acid	Based on the NITE GHS classification	Based on the NITE GHS classification
	results.	results.
Perfluorononan-1-oic acid	Based on the NITE GHS classification	Based on the NITE GHS classification
	results.	results.

Persistence and degradability Bioaccumulative potential

No information available Mobility in soil No information available No information available Hazard to the ozone layer

Section 13: DISPOSAL CONSIDERATIONS

Waste from residues

Disposal should be in accordance with applicable regional, national and local laws and regulations.

No information available

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

UN1230 **UN** number Proper shipping name: Methanol **UN classfication** 6.1 Subsidiary hazard class Packing group Ш

Marine pollutant Not applicable

IMDG

UN number UN1230 Proper shipping name: Methanol **UN classfication** 3 Subsidiary hazard class 6.1 Packing group Ш

Marine pollutant (Sea) Not applicable

Transport in bulk according to No information available

Annex II of MARPOL 73/78 and

the IBC Code

IATA

UN number UN1230 Proper shipping name: Methanol **UN classfication** 3 6.1 Subsidiary hazard class Packing group

Environmentally Hazardous Not applicable

Substance

Section 15: REGULATORY INFORMATION

Japanese regulations

Category IV, alcohols, dangerous grade 2 water-soluble **Fire Service Act**

Poisonous and Deleterious Not applicable

Substances Control Law

Industrial Safety and Health Act Harmful Substances Whose Names Are to be Indicated on the Label (Law Art.57)

Notifiable Substances (Law Art.57-2)

Class 2 Organic Solvents (Enforcement Order Attached Table No.6-2, Ordinance on

Prevention of Organic Solvent Poisoning Art.1, Para.1, Item 5)

Working Environment Evaluation Standards, Administrative Control Levels (Law Art.65-2,

Para.1)

Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1

Item 4)

Chemical Substances Hazardous to Skin, etc.(Regulations Article 594-2 Paragraph 1) Class I Specified Chemical Substances (Law Art.2, Para.2, Enforcement Order Art.1)

Act on the Evaluation of

Chemical Substances and

Regulation of Their

Monitoring Chemical Substances (Law Art.2, Para.4)

Manufacture, etc

Regulations for the carriage and storage of dangerous goods in ship

Flammable Liquids (Ordinance Art.3, Ministry of Transportation Ordinance Regarding

Transport by Ship and Storage, Attached Table 1)

Civil Aeronautics Law

Flammable Liquids (Ordinance Art.194, MITL Nortification for Air Transportation of

Explosives etc., Attached Table 1)

Pollutant Release and Transfer Not applicable

Register Law (2023.4.1-)

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-)
Methanol 67-56-1 (95.04)	-	Applicable	-
2-Propanol 67-63-0 (4.96)	-	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.

Record of SDS revisions

The following contents were revised. Prodauct and company Identification. Hazards identification. Composition/information on ingredients. Physical and chemical properties.

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