SAFETY DATA SHEET

According to JIS Z 7253:2019
Issue Date 03-Oct-2025
Revision Number 1.02

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	7 PFCs Internal Standards Mixture Solution (PFBS-13C4,PFBA-13C4,PFPeA-13C5,PFHxA-13C6,PFHpA-13C7,PFNA-13C6,GenX-13C3 each 2µg/mL Methanol Solution)
Product Code	166-29851,162-29853

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
Reference material (as defined in Japanese Industrial Standards (JIS) Q0030)

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

Flammable liquids	Category 2
Acute toxicity - Oral	Category 4
Serious eye damage/eye irritation	Category 2A
Reproductive Toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 1, Category 3
Category 1 central nervous system, Visual organ, systemic toxicity	
Category 3 Narcotic effects	
Specific target organ toxicity (repeated exposure)	Category 1
Category 1 central nervous system, Visual organ	

Pictograms

Signal word Danger

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

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
- 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	99.99825	32.04	2-201	*	67-56-1
Heptafluorobutyric acid-13C4	0.00025	218.01	N/A	N/A	1017281-29-6
Perfluoro(2-methyl-3-oxahexanoic) Acid	0.00025	330.05	N/A	2-(4)-1175	13252-13-6
Perfluoropentanoic acid-13C5	0.00025	269.01	N/A	N/A	2283397-79-3
Perfluoroheptanoic acid-13C7	0.00025	371.01	N/A	N/A	2483735-19-7
Undecafluorohexanoic Acid	0.00025	314.05	N/A	2-1182	307-24-4
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic Acid	0.00025	300.10	N/A	2-(4)-774	375-73-5
Perfluorononan-1-oic	0.00025	464.08	(2)-1182	*	375-95-1

acid					

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

The infomation on ingridient(s) above includes native structures.

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 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	Container protected from light, and store tightly closed in freezer (-20°C). Packed with an inert gas.
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 hand- and eye-wash facility. And display their position clearly.

Exposure limits

Chemical Name	JSOH (Japan)	ISHL (Japan)	ACGIH
Methanol 67-56-1	200ppm(260 mg/m^3)	200ppm	TWA 200ppm(260mg/m^3) STEL 250ppm

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

Data except for the appearance is described as a Methanol.

Form

Color	colorless
Turbidity	clear
Appearance	liquid
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：	no data available
Lower：	no data available
Flash point	11 °C
Auto-ignition temperature:	464 °C
Decomposition temperature:	no data available
pH	no data available
Viscosity (coefficient of viscosity)	no data available
Dynamic viscosity	no data available
Solubilities	water , ethanol, acetone : Very soluble.
n-Octanol/water partition coefficient:(log Pow)	no data available
Vapour pressure	no data available
Specific Gravity / Relative density	0.791 - 0.793 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 monooxide (CO), Carbon dioxide (CO2), Halides

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)
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.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Perfluorononan-1-oic 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
Methanol	Based on the NITE GHS	Based on the NITE GHS	Based on the NITE GHS

	classification results.	classification results.	classification results.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Perfluorononan-1-oic 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
Methanol	Based on the NITE GHS classification results.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic 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.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic 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.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagencity source information
Methanol	Based on the NITE GHS classification results.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic 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.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Methanol	Based on the NITE GHS classification results.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic 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.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic Acid	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Methanol	Based on the NITE GHS classification results.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic 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.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic 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 15400 mg/L 96 h*	*LC50 : Artemia 1340 mg/L 96 h*
Undecafluorohexanoic Acid	*ErC50 : Desmodesmus 86 mg/L 72 h*	*LC50 : > 100 mg/L 96 h*	*EC50 : Daphnia magna 1,048 mg/L 48 h*
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic Acid	*ErC50 : Raphidocelis > 20,250 mg/L 72 h*	*LC50 : Fathead minnow 1,720 mg/L 96 h*	*LC50 : Americamysis bahia 330 mg/L 96 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
Methanol	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Undecafluorohexanoic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
1,1,2,2,3,3,4,4,4-Nonafluoro-1-butanesulfonic Acid	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
Perfluorononan-1-oic acid	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

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 UN1230
Proper shipping name: Methanol
UN classfication 3
Subsidiary hazard class 6.1
Packing group II
Marine pollutant Not applicable

IMDG

UN number	UN1230
Proper shipping name:	Methanol
UN classfication	3
Subsidiary hazard class	6.1
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	UN1230
Proper shipping name:	Methanol
UN classfication	3
Subsidiary hazard class	6.1
Packing group	II
Environmentally Hazardous Substance	Not applicable

Section 15: REGULATORY INFORMATION

Japanese regulations

Fire Service Act	Category IV, alcohols, dangerous grade 2 water-soluble
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) 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)
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 Register Law (2023.4.1-)	Not applicable
Air Pollution Control Law	Specified 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-)
Methanol 67-56-1 (99.99825)	-	Applicable	-

Section 16: OTHER INFORMATION

Key literature references and NITE: National Institute of Technology and Evaluation (JAPAN)

sources for data etc.	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. etc
Record of SDS revisions	The following contents were revised. Prodauct and company Identification. Composition/information on ingredients. Physical and chemical properties. Toxicological information. Ecological information.

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