SAFETY DATA SHEET

According to JIS Z 7253:2019
Revision date 21-May-2023
Revision Number 6.05

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name	Xylene Standard Solution (o -,m -,p - each 1µg/µL Pentane Solution)
Product Code	246-00661

Manufacturer
FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome
Chuo-ku, Osaka 540-8605, Japan
Phone: +81-6-6203-3741
Fax: +81-6-6203-5964

Supplier
FUJIFILM Wako Pure Chemical Corporation
1-2 Doshomachi 3-Chome, Chuo-ku, Osaka 540-8605, Japan
Phone: +81-6-6203-3741
Fax: +81-6-6203-2029

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

Flammable liquids	Category 2
Serious eye damage/eye irritation	Category 2B
Reproductive Toxicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Category 3 Respiratory irritation, Narcotic effects	
Aspiration hazard	Category 1
Acute aquatic toxicity	Category 2

Pictograms

Signal word Danger

Hazard statements
H225 - Highly flammable liquid and vapor
H320 - Causes eye irritation
H360 - May damage fertility or the unborn child
H335 - May cause respiratory irritation
H336 - May cause drowsiness or dizziness
H304 - May be fatal if swallowed and enters airways
H401 - Toxic to aquatic life

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
- Avoid breathing 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 exposed or concerned: Get medical advice/attention
- 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
- IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
- Do NOT induce vomiting
- In case of fire: Use CO2, dry chemical, or foam for extinction

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 Mixture

Chemical Name	Weight-%	Molecular weight	ENCS	ISHL No.	CAS RN
Pentane	<100	72.15	(2)-5	*	109-66-0
o-Xylene	0.1 w/v%	106.17	(3)-3,(3)-60	4-(1)-39	95-47-6
p-Xylene	0.1 w/v%	106.17	(3)-3,(3)-60	4-(1)-39	106-42-3
m-Xylene	0.1 w/v%	106.16	(3)-3,(3)-60	4-(1)-39	108-38-3

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
Water spray (fog), 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
Highly flammable. Avoid contact with high temperature objects, spark, and strong oxidizing agents. 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	Keep container protect from light tightly closed. Store in a cool (2-10 °C) place.
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
Pentane 109-66-0	TWA: 300 ppm OEL TWA: 880 mg/m³ OEL	N/A	TWA: 1000 ppm
o-Xylene 95-47-6	50 ppm(217 mg/m³)	ISHL/ACL: 50 ppm	STEL: 150 ppm TWA: 100 ppm
p-Xylene 106-42-3	TWA: 50 ppm OEL TWA: 217 mg/m³ OEL ISHL/ACL: 50 ppm	ISHL/ACL: 50 ppm	STEL: 150 ppm TWA: 100 ppm
m-Xylene 108-38-3	TWA: 50 ppm OEL TWA: 217 mg/m³ OEL ISHL/ACL: 50 ppm	ISHL/ACL: 50 ppm	STEL: 150 ppm TWA: 100 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
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	-129 °C
Boiling point, initial boiling point and boiling range	36 °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:	8.0 vol%
Lower:	1.4 vol%
Flash point	-49 °C / -56 °F
Auto-ignition temperature:	260 °C / 500 °F
Decomposition temperature:	no data available
pH	no data available
Viscosity (coefficient of viscosity)	no data available
Dynamic viscosity	no data available
Solubilities	Ethanol : Miscible at any arbitrary ratio . water : insoluble .
n-Octanol/water partition coefficient:(log Pow)	3.45
Vapour pressure	68.3 kPa (25°C)
Specific Gravity / Relative density	0.625 -0.630 g/mL (20℃)
Vapour density	2.49
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)

Section 11: TOXICOLOGICAL INFORMATION

Acute toxicity

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Pentane	> 2000 mg/kg (Rat)	3000 mg/kg (Rabbit)	69765 ppm (Mouse) 4 h
o-Xylene	3608 mg/kg (Rat)	14100 mg/kg (Rabbit)	4330 ppm (Rat) 6 h
p-Xylene	4029 mg/kg (Rat)	N/A	4550 ppm (Rat) 4 h 4740 ppm (Rat) 4 h
m-Xylene	5 g/kg (Rat)	12.18 g/kg (Rabbit) 14100 µL/kg (Rabbit)	5984 ppm (Rat) 6 h

Chemical Name	Acute toxicity -oral- source information	Acute toxicity -dermal- source information	Acute toxicity -inhalation gas- source information
Pentane	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
m-Xylene	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
Pentane	Based on the NITE GHS Classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
m-Xylene	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
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

Serious eye damage/ irritation

Chemical Name	Serious eye damage/irritation source information
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

Respiratory or skin sensitization

Chemical Name	Respiratory or Skin sensitization source information
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

Reproductive cell mutagenicity

Chemical Name	germ cell mutagencity source information
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

Carcinogenicity

Chemical Name	Carcinogenicity source information
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

Chemical Name	NTP	IARC	ACGIH	JSOH (Japan)
o-Xylene 95-47-6	-	Group 3	-	-
p-Xylene 106-42-3		Group 3		
m-Xylene 108-38-3	-	Group 3	-	-

Reproductive toxicity

Chemical Name	Reproductive toxicity source information
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

STOT-single exposure

Chemical Name	STOT -single exposure- source information
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

STOT-repeated exposure

Chemical Name	STOT -repeated exposure- source information
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

Aspiration hazard

Chemical Name	Aspiration Hazard source information
Pentane	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Pentane	*N/A*	*N/A*	*EC50:Daphnia magna 2.7 mg/L 48 h*
o-Xylene	*ErC50 : Scenedesmus sp. 0.799 mg/L 72 h*	*LC50 : Oncorhynchus mykiss 5.59 - 11.6 mg/L 96 h*	*EC50 : Daphnia magna 0.78 - 2.51 mg/L 48 h*
p-Xylene	*EC50:Chlorella vulgaris 105.1 mg/L 3 h* *EC50:Pseudokirchneriella subcapitata*	*LC50:Pimephales promelas 7.2 - 9.9 mg/L 96 h* *LC50:Oncorhynchus mykiss 2.6 mg/L 96 h*	*EC50:Daphnia magna 3.55 - 6.31 mg/L 48 h*

	3.2 mg/L 72 h static	*LC50:Poecilia reticulata 8.8 mg/L 96 h*	
m-Xylene	*EC50:Pseudokirchneriella subcapitata 4.9 mg/L 72 h static*	*LC50:Pimephales promelas 14.3 - 18 mg/L 96 h LC50:Poecilia reticulata 12.9 mg/L 96 h LC50:Oncorhynchus mykiss 8.4 mg/L 96 h*	*EC50:Daphnia magna 2.81 - 5.0 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
Pentane	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
o-Xylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
p-Xylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.
m-Xylene	Based on the NITE GHS classification results.	Based on the NITE GHS classification results.

Persistence and degradability Degree of decomposition：96 % by BOD (METI Existing chemical safety inspections)
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 UN1265
Proper shipping name: Pentanes
UN classfication 3
Subsidiary hazard class
Packing group II
Marine pollutant Not applicable

IMDG
UN number UN1265
Proper shipping name: Pentanes
UN classfication 3
Subsidiary hazard class
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 UN1265
Proper shipping name: Pentanes
UN classfication 3
Subsidiary hazard class
Packing group II
Environmentally Hazardous Not applicable

Substance

Section 15: REGULATORY INFORMATION

International Inventories

EINECS/ELINCS	-
TSCA	-

Japanese regulations

Fire Service Act	Category IV, special inflammable materials, dangerous grade 1
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 Oder Art.18-2 Attached Table No.9)No.543,136 Dangerous Substances - Flammable Substance (Enforcement Order Attached Table 1 Item 4)
Act on the Evaluation of Chemical Substances and Regulation of Their Manufacture, etc	Priority Assessment Chemical Substances (Law Article 2, Para.5)
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)
Marine Pollution Prevention Law	Enforcement ordinance Appendix No. 1 Noxious liquid substance Category Y
Pollutant Release and Transfer Register Law (2023.4.1-)	Not applicable
Export Trade Control Order	Not applicable

Chemical Name	Poisonous and Deleterious Substances Control Law	Industrial Safety and Health Act Substances (Law Art.57-2) (~2024.3.31)	Pollutant Release and Transfer Register Law (2023.4.1-)
Pentane 109-66-0 (<100)	-	Applicable	-
o-Xylene 95-47-6 (0.1 w/v%)	-	Applicable	-
p-Xylene 106-42-3 (0.1 w/v%)	-	Applicable	-
m-Xylene 108-38-3 (0.1 w/v%)	-	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 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. Exposure controls/personal protection. Regulatory 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