

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 11/06/2015

Version 1.2

SECTION 1. Identification

Product identifier

Product number	808697
Product name	o-Xylene for synthesis
CAS-No.	95-47-6

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Chemical for synthesis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 3, H226
Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 4, Dermal, H312
Skin irritation, Category 2, H315
Eye irritation, Category 2A, H319
Specific target organ systemic toxicity - single exposure, Category 3, Respiratory system, H335
Aspiration hazard, Category 1, H304

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H226 Flammable liquid and vapor.
H304 May be fatal if swallowed and enters airways.

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H312 + H332 Harmful in contact with skin or if inhaled.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary Statements

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312 Call a POISON CENTER or doctor/ physician if you feel unwell.
P322 Specific measures (see supplemental first aid instructions on this label).
P331 Do NOT induce vomiting.
P332 + P313 If skin irritation occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	$C_6H_4(CH_3)_2$	C_8H_{10} (Hill)
Molar mass	106.17 g/mol	

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

o-xylene ($\geq 90\%$ - $\leq 100\%$)

95-47-6

Exact percentages are being withheld as a trade secret.

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SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration. Oxygen if necessary. Immediately call in physician.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing. Get medical attention.

Eye contact

After eye contact: rinse out with plenty of water with the eyelid held wide open. Call in ophthalmologist if necessary.

Ingestion

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately. Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Dizziness, narcosis, agitation, spasms, euphoria, Headache, somnolence

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

Pay attention to flashback.

Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Cool closed containers exposed to fire with water spray. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities

Keep away from heat and sources of ignition. Keep container tightly closed in a dry and well-ventilated place.

Store at +15°C to +25°C (+59°F to +77°F).

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SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
<i>o-xylene 95-47-6</i>			
NIOSH/GUIDE	Short Term Exposure Limit (STEL):	150 ppm 655 mg/m ³	
	Recommended exposure limit (REL):	100 ppm 435 mg/m ³	
OSHA_TRANS	PEL:	100 ppm 435 mg/m ³	
Z1A	Short Term Exposure Limit (STEL):	150 ppm 655 mg/m ³	
	Time Weighted Average (TWA):	100 ppm 435 mg/m ³	
ACGIH	Time Weighted Average (TWA):	100 ppm	
	Short Term Exposure Limit (STEL):	150 ppm	

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:

Flame retardant antistatic protective clothing.

Respiratory protection

required when vapors/aerosols are generated.

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SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	aromatic
Odor Threshold	No information available.
pH	No information available.
Melting point	-25.2 °C at 1,013 hPa
Boiling point/boiling range	144.5 °C (144.5 °C) at 1,013 hPa
Flash point	30 °C (30 °C) at 1,013 hPa Method: closed cup
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	1.0 %(V)
Upper explosion limit	7.6 %(V)
Vapor pressure	7 hPa at 20 °C (20 °C)
Relative vapor density	3.7
Density	0.88 g/cm ³ at 20 °C (20 °C)
Relative density	No information available.
Water solubility	0.18 g/l at 20 °C (20 °C)
Partition coefficient: n-octanol/water	log Pow: 3.13 (25 °C) (experimental) (IUCPID) Bioaccumulation is not expected.
Autoignition temperature	No information available.

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Decomposition temperature	No information available.
Viscosity, dynamic	0.81 mPa.s at 20 °C (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	465 °C (465 °C)

SECTION 10. Stability and reactivity

Reactivity

Vapor/air-mixtures are explosive at intense warming.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions

Violent reactions possible with:

Risk of explosion with:

Strong oxidizing agents, conc. sulfuric acid, Nitric acid, uranium hexafluoride, sulfur

Conditions to avoid

Heating.

Incompatible materials

rubber, various plastics

Hazardous decomposition products

no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

Target Organs

Eyes

Skin

Respiratory system

Central nervous system

gastrointestinal tract

Blood

Liver

Kidneys

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Acute oral toxicity

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.

Acute inhalation toxicity

LC50 Rat: 12.53 mg/l; 4 h ; vapor
(ECHA)

Symptoms: Inhalation may lead to the formation of oedemas in the respiratory tract.
absorption

Acute dermal toxicity

Acute toxicity estimate : 1,100.1 mg/kg
Expert judgment

absorption

Skin irritation

Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.
Causes skin irritation.

Rabbit

Result: irritating
(ECHA)

Eye irritation

Causes serious eye irritation.

Genotoxicity in vivo

Micronucleus test

Mouse

Result: negative

Method: OECD Test Guideline 474

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

Method: OECD Test Guideline 473

sister chromatid exchange assay

Result: negative

Method: OECD Test Guideline 479

Specific target organ systemic toxicity - single exposure

Target Organs: Respiratory system

May cause respiratory irritation.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

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Aspiration hazard

Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

After absorption of toxic quantities:

Systemic effects:

Headache, somnolence, Dizziness, euphoria, agitation, spasms, narcosis

Effect potentiated by: ethanol

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

static test LC50 *Oncorhynchus mykiss* (rainbow trout): 7.6 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

flow-through test EC50 *Daphnia magna* (Water flea): 3.82 mg/l; 48 h

Analytical monitoring: yes(ECHA)

Toxicity to algae

static test EC50 *Pseudokirchneriella subcapitata* (green algae): 4.7 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

Persistence and degradability

Biodegradability

> 60 %; 28 d; aerobic

OECD Test Guideline 301F

The 10 day time window criterion is not fulfilled.

Readily biodegradable.

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Theoretical oxygen demand (ThOD)

3,125 mg/g
(Lit.)

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 3.13 (25 °C)
(experimental)
(IUCLID) Bioaccumulation is not expected.

Mobility in soil

Distribution among environmental compartments

Adsorption/Soil
log Koc: 2.38
(experimental)
Moderately mobile in soils

Other adverse effects

Henry constant

525 Pa·m³/mol
Method: (experimental)
(Lit.) Distribution preferentially in air.

Additional ecological information

Biological effects:
Hazard for drinking water supplies.
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1307
Proper shipping name	XYLENES
Class	3
Packing group	III
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1307
Proper shipping name	XYLENES
Class	3
Packing group	III
Environmentally hazardous	--

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Product number

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Product name

o-Xylene for synthesis

Special precautions for user

no

Sea transport (IMDG)

UN number

UN 1307

Proper shipping name

XYLENES

Class

3

Packing group

III

Environmentally hazardous

--

Special precautions for user

yes

EmS

F-E S-D

SECTION 15. Regulatory information

United States of America

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

o-xylene

95-47-6

100 %

SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

Ingredients

o-xylene

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

Ingredients

o-xylene

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

US State Regulations

Massachusetts Right To Know

Ingredients

o-xylene

Pennsylvania Right To Know

Ingredients

o-xylene

New Jersey Right To Know

Ingredients

o-xylene

California Prop 65 Components

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This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA: All components of the product are listed in the TSCA-inventory.

DSL: All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H226 Flammable liquid and vapor.

H304 May be fatal if swallowed and enters airways.

H312 + H332 Harmful in contact with skin or if inhaled.

H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H412 Harmful to aquatic life with long lasting effects.

Precautionary Statements

Prevention

P210 Keep away from heat.

P273 Avoid release to the environment.

Response

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P313 Get medical advice/ attention.

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Product name

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Full text of H-Statements referred to under sections 2 and 3.

H226	Flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 11/06/2015

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

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