# 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 |

### 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) |
| **Emergency telephone** | 800-424-9300 CHEMTREC (USA)<br>+1-703-527-3887 CHEMTREC (International)<br>24 Hours/day; 7 Days/week |

## 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.

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 (>= 90 % - <= 100 % )*
95-47-6

Exact percentages are being withheld as a trade secret.

## 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.

## 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).

## SECTION 8. Exposure controls/personal protection

### Exposure limit(s)

*Ingredients*

| Basis | Value | Threshold limits | Remarks |
|---|---|---|---|
| *o-xylene 95-47-6* | | | |
| NIOSH/GUIDE | Short Term Exposure Limit (STEL): | 150 ppm<br>655 mg/m³ | |
| | Recommended exposure limit (REL): | 100 ppm<br>435 mg/m³ | |
| OSHA_TRANS | PEL: | 100 ppm<br>435 mg/m³ | |
| Z1A | Short Term Exposure Limit (STEL): | 150 ppm<br>655 mg/m³ | |
| | Time Weighted Average (TWA): | 100 ppm<br>435 mg/m³ | |
| 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.

## 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<br>at 1,013 hPa |
| Boiling point/boiling range | 144.5 °C (144.5 °C)<br>at 1,013 hPa |
| Flash point | 30 °C (30 °C)<br>at 1,013 hPa<br><br>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<br>at 20 °C (20 °C) |
| Relative vapor density | 3.7 |
| Density | 0.88 g/cm3<br>at 20 °C (20 °C) |
| Relative density | No information available. |
| Water solubility | 0.18 g/l<br>at 20 °C (20 °C) |
| Partition coefficient: n-octanol/water | log Pow: 3.13 (25 °C)<br>(experimental)<br>(IUCLID) Bioaccumulation is not expected. |
| Autoignition temperature | No information available. |

| | |
|---|---|
| Decomposition temperature | No information available. |
| Viscosity, dynamic | 0.81 mPa.s<br>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

*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.

*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.

*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** | -- |

| | |
|---|---|
| **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

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.

**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.

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