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

Revision Date 11/06/2015

SECTION 1. Identification
Product identifier

Product number 109798
Product name o-Xylene reference substance for gas chromatography
CAS-No. 95-47-6

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

Identified uses Reagent for analysis

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)
+1-703-527-3887 CHEMTREC (International)
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

<table>
<thead>
<tr>
<th>Formula</th>
<th>Chemical Name (Concentration)</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C₆H₄(CH₃)₂</td>
<td>o-Xylene reference substance for gas chromatography</td>
<td>C₆H₁₀ (Hill)</td>
</tr>
<tr>
<td>Molar mass</td>
<td>106.17 g/mol</td>
<td></td>
</tr>
</tbody>
</table>

Hazardous ingredients

Chemical Name (Concentration)
CAS-No.
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

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.

Storage temperature: no restrictions.
SECTION 8. Exposure controls/personal protection

Exposure limit(s)

<table>
<thead>
<tr>
<th>Ingredients</th>
<th>Basis</th>
<th>Value Description</th>
<th>Basis</th>
<th>Value</th>
<th>Threshold limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>o-xylene 95-47-6</td>
<td>NIOSH/GUIDE</td>
<td>Short Term Exposure Limit (STEL): 150 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>655 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recommended exposure limit (REL): 100 ppm</td>
<td></td>
<td></td>
<td>435 mg/m³</td>
</tr>
<tr>
<td></td>
<td>OSHA_TRANS</td>
<td>PEL:</td>
<td></td>
<td></td>
<td>100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>435 mg/m³</td>
</tr>
<tr>
<td>Z1A</td>
<td></td>
<td>Short Term Exposure Limit (STEL): 150 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>655 mg/m³</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Time Weighted Average (TWA):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>435 mg/m³</td>
</tr>
<tr>
<td>ACGIH</td>
<td></td>
<td>Time Weighted Average (TWA):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>100 ppm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Short Term Exposure Limit (STEL): 150 ppm</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical state</strong></td>
<td>liquid</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>colorless</td>
</tr>
<tr>
<td><strong>Odor</strong></td>
<td>aromatic</td>
</tr>
<tr>
<td><strong>Odor Threshold</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>pH</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Melting point</strong></td>
<td>-25.2 °C at 1,013 hPa</td>
</tr>
<tr>
<td><strong>Boiling point/boiling range</strong></td>
<td>144.5 °C (144.5 °C) at 1,013 hPa</td>
</tr>
<tr>
<td><strong>Flash point</strong></td>
<td>30 °C (30 °C) at 1,013 hPa</td>
</tr>
<tr>
<td><strong>Evaporation rate</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Flammability (solid, gas)</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Lower explosion limit</strong></td>
<td>1.0 %(V)</td>
</tr>
<tr>
<td><strong>Upper explosion limit</strong></td>
<td>7.6 %(V)</td>
</tr>
<tr>
<td><strong>Vapor pressure</strong></td>
<td>7 hPa at 20 °C (20 °C)</td>
</tr>
<tr>
<td><strong>Relative vapor density</strong></td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>0.88 g/cm³ at 20 °C (20 °C)</td>
</tr>
<tr>
<td><strong>Relative density</strong></td>
<td>No information available.</td>
</tr>
<tr>
<td><strong>Water solubility</strong></td>
<td>0.18 g/l at 20 °C (20 °C)</td>
</tr>
<tr>
<td><strong>Partition coefficient: n-octanol/water</strong></td>
<td>log Pow: 3.13 (25 °C) (experimental) (IUCLID) Bioaccumulation is not expected.</td>
</tr>
<tr>
<td><strong>Autoignition temperature</strong></td>
<td>No information available.</td>
</tr>
</tbody>
</table>
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
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.

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

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

<table>
<thead>
<tr>
<th>Source</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IARC</td>
<td>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.</td>
</tr>
<tr>
<td>OSHA</td>
<td>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.</td>
</tr>
<tr>
<td>NTP</td>
<td>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.</td>
</tr>
<tr>
<td>ACGIH</td>
<td>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.</td>
</tr>
</tbody>
</table>

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)  
(IUCID) 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 109798
Product name o-Xylene reference substance for gas chromatography

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*

![Pictogram](image)

**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 number 109798
Product name o-Xylene reference substance for gas chromatography

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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