



MATERIAL SAFETY DATA SHEET

(According to GHS rev. 5)



O-XILENO

1. IDENTIFICATION

Company: YPF S.A. Address: Av. Macacha Güemes n° 515 CP C1106BKK Buenos Aires - ARGENTINA Tel# (+ 5411) 5441-2000 Fax# (+ 5411) 5441-5796	Commercial name: O-XYLENE Chemical name: o-Xylene.
	Synonyms: 1,2-dimethylbenzene. O-Methyltoluene. 1,2-Xylene. o-Xylol.
	Emergency Telephone: Argentina: 0800-222-2933 Other countries: (+5411) 4611 2007

2. HAZARD IDENTIFICATION

2.1 LABEL ELEMENTS

Pictograms			
Warning word	Atención		
Hazard statement	H226 - Highly flammable liquid and vapour.	H312 - Harmful in contact with skin. H315 - Causes skin irritation. H332 - Harmful if inhaled.	-
Classification criteria	Flammable liquid (Category 2)	Acute toxicity, inhalation (category 4) Acute toxicity, dermal (category 4) Skin irritation (category 2)	-
Other regulations	-		

OTHER HAZARDS

Highly flammable and combustible liquid.

Floats on water. It can obstruct sewers and water intakes.

3. COMPOSITION/INFORMATION ON INGREDIENTS

General composition: o-Xylene.

Main components	Range %	Classification	S Phrases
o-Xylene	100		

4. FIRST-AID MEASURES

Inhalation: Move the affected person to fresh air. If breathing is difficult, apply artificial respiration or administer oxygen. Call for medical attention.

Ingestion/Aspiration: DO NOT INDUCE VOMITING. Call for medical attention urgently.

Contact skin/eyes: Remove contaminated clothing. Wash the affected area thoroughly with soap and water. Call for medical attention . Flush with copious amounts of water for up to 15 minutes. Call for medical attention.

General measures: Call for medical attention urgently.

5. FIRE-FIGHTING MEASURES

Extinguishing agents: CO₂, foams, water spray and dry chemicals.

Non suitable extinguishing agents: WATER SHOULD NEVER BE USED DIRECTLY.

Combustion products: CO₂, H₂O and CO and toxic/irritant vapours in case of incomplete combustion.

Special measures: Move container from fire area if it can be done without risk. Apply cooling water to the containers sides exposed to flames until well after fire is out. Stay away from tank. In case of massive fire in cargo area, use unmanned hose holder or monitor nozzles; if fire goes out of control, withdraw from area and let fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tank wall due to fire. Consult and follow existing emergency standard procedures.

Special hazards: Highly flammable/combustible liquid. Vapours may form explosive mixtures with air. May be ignited by heat, sparks, static electricity or flames. Vapour may travel to remote ignition sources and flash back. Empty containers may explode in heat of fire. Vapour explosion hazard indoors, outdoors or in sewers. Runoff to drains or sewers may create fire and explosion hazard.

Protective equipment: Firefighters' protective clothing. At high concentration of vapours and/or fumes, self-contained breathing apparatus will be needed.

6. ACCIDENTAL RELEASE MEASURES

Environmental precautions: Spillages form a film over water surface, which avoid oxygen transfer.

Cleanup methods: Small spillages: Take up with non-combustible absorbent materials. Transfer to sealed containers for later disposal.

Large spillages: Avoid product dispersion with mechanical barriers. Dike far ahead of liquid spill and aspirate liquid into closed containers for later disposal.

Personal precautions: Isolate the area. Avoid vapour inhalation and skin and eye contact with the product. Eliminate all ignition sources. Do not smoke in the area.

Personal protection: Self-contained breathing apparatus, suitable protective clothing, safety goggles and gloves to prevent contact with the product.

7. HANDLING AND STORAGE

Handling:

General precautions: Wear suitable protective clothing, gloves and safety goggles to prevent skin and eyes contact with the product and use respiratory protection to prevent exposure by inhalation. In the areas where the product is stored, handled or used, keep all ignition sources away and do not smoke. Product transfer must be done in earthed, airtight conducts. Electrically ground all equipment when handling this product and use only non-sparking tools.

Specific conditions: Good antisparking ventilation system. Special procedures during bulk loading, cleaning and maintaining the tanks to avoid vapour exposure. Make sure that tanks have been thoroughly purged before performing any cleaning or maintaining procedure

Specific Use: Synthesis of phthalic anhydride and polyester and alkyd resins. Jet fuel.Solvent.

Storage:

Temperature and decomposition products: NP

Dangerous reactions: Highly flammable/combustible liquid. It reacts violently with 1,3-dichloro 5,5-dimethyl 2,4 imidazolidindione.

Storage conditions: Keep the product in properly sealed and labelled containers in cool and well-ventilated place. Keep them away from ignition sources and incompatible materials.

Incompatible materials: Strong oxidants, strong acids.

8.EXPOSURE CONTROLS/PERSONAL PROTECTION

Personal protection:

Eye protection: Safety goggles or face-shield to prevent eyes contact with the product.

Respiratory protection: At high vapours concentration, self-contained breathing apparatus will be needed.

Skin protection: Gloves, suitable protective clothing and appropriate footwear are recommended.

Other protective equipment: Showers and eye-washers in working area.

General precautions: Good local exhaust ventilation. Avoid direct contact with the product and vapour inhalation.

Specific hygiene measures: Contaminated clothing should be changed immediately. Good work practices and the adoption of good personal hygiene measures reduce unnecessary exposures. Care should be taken to ensure proper skin cleaning by washing thoroughly with soap and water, followed by the application of a skin re-conditioning cream. Use skin reconditioning cream after work.

Exposure controls: TLV/TWA (ACGIH): 100 ppm

TLV/STEL (ACGIH): 150 ppm

VLA-ED (INSHT): 50 ppm

VLA-EC (INSHT): 100 ppm

IDLH (Immediately Dangerous for Life &Health): 900 ppm

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:Liquid.

pH: NP

Colour:Colourless.

Odour: Aromatic.

Boiling point: 144.41°C (291.94 °F)

Melting/Freezing point: -25.18 °C (55.87°F)

Flash point: 17 °C (62.6°F) C/C

Autoignition temperature: 530 °C (986 °F)

Explosive properties: Lower Explosive Limit: 1.0 %
Upper Explosive Limit: 6.0 %

Oxidizing properties: NP

Vapour pressure: 6.8 mm Hg at 25°C

Density: 0.880 g/cc at 20°C

Surface tension: NP

Viscosity:

Vapour density: 3.66 (Air: 1)

Partition coefficient (n-octanol/water): NP

Water solubility: Insoluble.

Solubility: Miscible in alcohol, ether and acetone.

Other data: Molecular weight: 106.18 g/mol
Evaporation index: 2.8 (Ether: 1)

10. STABILITY AND REACTIVITY

Stability: Highly flammable and combustible liquid at room temperature.

Conditions to avoid: Sparks, flames and ignition sources.

Materials to avoid: Strong oxidants, strong acids.

Hazardous decomposition/combustion products: CO and toxic vapours in case of incomplete combustion

Polymerizations risk: NP

Conditions to avoid: NP

11. TOXICOLOGICAL INFORMATION

Routes of exposure: Inhalation. Skin and eyes contact. Ingestion is easy to avoid

Acute and chronic effects: Harmful by inhalation and in contact with skin. Exposures to vapours or liquid may cause respiratory system, skin and eyes irritation.

LD₅₀: > 2000 mg/kg (oral-rat) LD₅₀: > 2000 mg/kg (skin-rabbit)

Carcinogenicity: IARC classification: **Group 3** (The agent is not classifiable as to its carcinogenicity to humans).

Reproductive toxicity: No data available.

Medical conditions wich increase hazard to exposure: Respiratory deficiencies and dermatological problems. It may aggravate existing liver, kidney, and central nervous system or blood disease.

12. ECOLOGICAL INFORMATION

Pollutant potential:

Persistence and degradability: It floats on water and it presents a hazard of physical fouling to shoreline, soils, etc. Released to the environment, o-xylene is expected to volatilize or to adsorb to suspended solids and sediment. o-Xylene biodegradation is an important process.

Mobility/bioaccumulative potential: It has a high mobility in soil. o-xylene has an experimental bioconcentration factor (BCF) of 14-21 which suggests that bioconcentration in aquatic organism is low. Released into the atmosphere, it reacts with hydroxyl radicals photochemically produced, having an estimated half-life of 1.2 days.

Ecotoxicological effects: No data available.

13. DISPOSAL CONSIDERATIONS

Disposal methods (surplus): Incineration or recycling when possible.

Waste: Liquids and solid from industrial processes or other uses.

Disposal: Consult with authorized environmental regulatory agencies for guidance on acceptable disposal practices.

Handling: Contaminated materials have the same risk and need the same precautions as the product. Do not run off the product to sewers.

Provisions: Companies that recover, dispose, store, transport or handle waste should comply with local and/or national provisions in force on waste management.

14. TRANSPORT INFORMATION

Special precautions: Stable at room temperature during transport. Transport in properly sealed and labelled containers to prevent spillages.

Additional Information:

LAND TRANSPORT:

Proper shipping name :	XYLENES
UN Number :	1307
Hazard class :	3
Hazard identification number :	33
Packing group :	II
Exempt amount :	333 Kg

AIR TRANSPORT (ICAO/IATA) :

Proper shipping name :	XYLENES
UN Number :	1307
Hazard class :	3
Packing group :	II
CRE :	3L
Passenger and cargo aircraft :	Y341, 1L / 353, 5L
Cargo aircraft only :	364, 60L

MARITIME TRANSPORT (IMDG/IMO) :

Proper shipping name :	XYLENES
UN Number :	1307
Hazard class :	3
Packing group :	II
Marine pollutant :	NO
Stowage and segregation :	Category A
Ems :	F-E; S-D

15. REGULATORY INFORMATION

CLASIFICACION: LABELLING

Symbols: F, Xn

Phrases R: R11: Highly Flammable.
R20/21: Harmful by inhalation and in contact with skin.
R38: Irritating to skin.

**F; R11
Xn; R20/21
Xi; R38**

Phrases S: S9: Keep container in a well-ventilated place.
S16: Keep away from sources of ignition - No smoking.
S25: void contact with eyes.
S33: Take precautionary measures against static discharges.

Other regulations: o-Xylene is listed in TSCA Inventory (EPA).

16. OTHER INFORMATION

Data Bases consulted

EINECS: European Inventory of Existing Commercial Substances.
TSCA: Toxic Substances Control Act, US Environmental Protection Agency
HSDB: US National Library of Medicine.
RTECS: US Dept. of Health & Human Services

R phrases show in the document:

Legislation consulted:

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
Dir. 67/548/EEC about classification, labelling and packaging of dangerous substances (including amendments and adaptations in force).
Dir. 1999/45/EC about classification, labelling and packaging of dangerous preparations (including amendments and adaptations in force).
Dir. 91/689/EEC dangerous waste; Dir. 91/156/EEC waste management.
Royal Decree 363/95: Regulation about notification of new substances and classification, packaging and labelling of dangerous substances.
Royal Decree 255/2003: Regulation about classification, packaging and labelling of dangerous preparations.
European Agreement concerning the international carriage of dangerous goods by road (ADR).
Regulation on the international transport of dangerous goods on the railway. (RID)
International maritime code of dangerous goods. (IMDG)
International Air Transport Association (IATA) regulation pertaining to air shipment.

Glossary:

CAS: Chemical Abstract Service	VLA-ED: Valor Límite Ambiental – Exposición Diaria
IARC: International Agency for Research on Cancer	VLA-EC: Valor Límite Ambiental – Exposición Corta
ACGIH: American Conference of Governmental Industrial Hygienists.	LD ₅₀ : Lethal Dose Medium
TLV: Threshold Limit Value	LC ₅₀ : Lethal Concentration Medium
TWA: Time Weighted Average	EC ₅₀ : Effective Concentration Medium
STEL: Short-term Exposure Level	IC ₅₀ : Inhibitory Concentration Medium
REL: Recommendable Exposure Limit	BOD: Biological Oxygen Demand.
PEL: Permissible Exposure Limit	NP: Not Pertinent
INSHT: Instituto Nal. de Seguridad e Higiene en el Trabajo	: Changes from the last revision

The information given in this document has been compiled based on the best existing information sources, latest available knowledge and according to the current requirements on classification, packaging and labelling of hazardous substances. It does not imply the information is exhaustive or accurate in all cases. It is the user's responsibility to determine the validity of the information contained in this Material Safety Data Sheet to apply depending on the case.