SAFETY DATA SHEET

1. Identification

Product identifier: XYLENES

Other means of identification
Product No.: X516, 8802, 8668, 8664, 9516, 9493, 9490, 5377, 9483

Recommended use and restriction on use

Recommended use: Not available.
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company Name:	Avantor Performance Materials, Inc.
Address:	3477 Corporate Parkway, Suite 200 Center Valley, PA 18034
Telephone:	Customer Service: 855-282-6867
Fax:	
Contact Person:	Environmental Health & Safety
e-mail:	info@avantormaterials.com

Emergency telephone number:
24 Hour Emergency: 908-859-2151

Chemtrec: 800-424-9300

2. Hazard(s) identification

Hazard classification

Physical hazards

Flammable liquids	Category 3

Health hazards

Acute toxicity (Dermal)	Category 4
Acute toxicity (Inhalation - vapor)	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Carcinogenicity	Category 2
Specific target organ toxicity - single exposure	Category 3
Specific target organ toxicity - repeated exposure	Category 1
Aspiration hazard	Category 1

Environmental hazards

Acute hazards to the aquatic environment	Category 2

Label elements

Hazard symbol:

Signal word: Danger

Hazard statement:
Flammable liquid and vapor.
Harmful if swallowed, in contact with skin or if inhaled.
Causes skin irritation.
Causes serious eye irritation.
Suspected of causing cancer.
Causes damage to organs through prolonged or repeated exposure.
Toxic to aquatic life.

Precautionary statement

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands thoroughly after handling.

Response: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

Other hazards which do not result in GHS classification: Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

3. Composition/information on ingredients

Mixtures

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
M-XYLENE		108-38-3	30 - 60%
P-XYLENE		106-42-3	10 - 30%
ETHYL BENZENE		100-41-4	10 - 30%
O-XYLENE		95-47-6	10 - 30%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation:	Move to fresh air. Get medical attention if symptoms persist.
Skin contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention if irritation persists after washing.

Most important symptoms/effects, acute and delayed

Symptoms:	Irritating to eyes, respiratory system and skin.

Indication of immediate medical attention and special treatment needed

Treatment:	Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General fire hazards:	Flammable liquid and vapor. In case of fire and/or explosion do not breathe fumes.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Water spray, fog, CO2, dry chemical, or alcohol resistant foam.
Unsuitable extinguishing media:	Avoid water in straight hose stream; will scatter and spread fire.
Specific hazards arising from the chemical:	Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Heat may cause the containers to explode. Prevent buildup of vapors or gases to explosive concentrations.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	Fight fire from a protected location. Use water spray to keep fire-exposed containers cool. Move containers from fire area if you can do so without risk. Water may be ineffective in fighting the fire.
Special protective equipment for fire-fighters:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). See Section 8 of the MSDS for Personal Protective Equipment. Keep unauthorized personnel away. Keep upwind. Ventilate closed spaces before entering them. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protective equipment.
Methods and material for containment and cleaning up:	Eliminate all ignition sources if safe to do so. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal. Take precautionary measures against static discharges. Use only non-sparking tools. Stop leak if possible without any risk.

Notification Procedures:	Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.
Environmental precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Precautions for safe handling:	Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Keep away from heat/sparks/open flames/hot surfaces. No smoking. Ground/bond container and receiving equipment. Take precautionary measures against static discharges. Do not breathe mist or vapor. Use only with adequate ventilation. Avoid contact with eyes. Avoid contact with skin.
Conditions for safe storage, including any incompatibilities:	Keep away from food, drink and animal feeding stuffs. Keep container tightly closed. Store in a well-ventilated place. Ground container and transfer equipment to eliminate static electric sparks. Comply with all national, state, and local codes pertaining to the storage, handling, dispensing, and disposal of flammable liquids.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
M-XYLENE	TWA	100 ppm	US. ACGIH Threshold Limit Values (02 2012)
	STEL	150 ppm	US. ACGIH Threshold Limit Values (02 2012)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	150 ppm 655 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm 435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
P-XYLENE	STEL	150 ppm	US. ACGIH Threshold Limit Values (02 2012)
	TWA	100 ppm	US. ACGIH Threshold Limit Values (02 2012)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	150 ppm 655 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm 435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
ETHYL BENZENE	TWA	20 ppm	US. ACGIH Threshold Limit Values (2011)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	125 ppm 545 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	100 ppm 435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	125 ppm 545 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
O-XYLENE	TWA	100 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	150 ppm	US. ACGIH Threshold Limit Values (2011)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	STEL	150 ppm 655 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm 435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Biological limit values

Chemical identity	Exposure Limit values	Source
M-XYLENE (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEL (02 2012)
P-XYLENE (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEL (02 2012)
ETHYL BENZENE (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift at end of work week.)	0.7 g/g (Creatinine in urine)	ACGIH BEL (2011)
O-XYLENE (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEL (02 2012)

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area. Use explosion-proof ventilation equipment.

Eye/face protection: Wear safety glasses with side shields (or goggles). Wear face shield if there is risk of splashes.

Skin protection

Hand protection: Chemical resistant gloves

Other: Wear suitable protective clothing.

Respiratory protection: In case of inadequate ventilation use suitable respirator.

Hygiene measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Provide eyewash station and safety shower. Wash hands before breaks and immediately after handling the product. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse.

9. Physical and chemical properties

Appearance

Physical state:	Liquid
Form:	Liquid
Color:	Colorless
Odor:	Characteristic
Odor threshold:	No data available.
pH:	Not applicable
Melting point/freezing point:	-41.5 °C
Initial boiling point and boiling range:	139 °C
Flash Point:	29 °C
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	7 %(V)
Flammability limit - lower (%):	1 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	1.1 kPa
Vapor density:	No data available.
Relative density:	0.86 (20 °C)
Solubility(ies)	
Solubility in water:	Insoluble in water
Solubility (other):	No data available.

Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	464 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Contact with incompatible materials.
Incompatible materials:	Strong oxidizing agents. Strong acids.
Hazardous decomposition products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	May be harmful if swallowed.
Inhalation:	Harmful if inhaled.
Skin contact:	Harmful in contact with skin. Causes skin irritation.
Eye contact:	Causes serious eye irritation.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product:	ATEmix (Rat): 3,190 mg/kg

Dermal

Product:	No data available.
Specified substance(s): M-XYLENE	LD 50 (Rabbit): 12,100 mg/kg
Specified substance(s): ETHYL BENZENE	LD 50 (Rabbit): 17,800 mg/kg

Inhalation

Product:	No data available.
Specified substance(s): M-XYLENE	LC 50 (Mouse, 6 h): 5,300 mg/l
Specified substance(s): P-XYLENE	LC 50 (Mouse, 6 h): 3,900 mg/l
Specified substance(s): O-XYLENE	LC 50 (Mouse, 6 h): 4,600 mg/l LC 50 (Rat, 4 h): 6,350 mg/l

Repeated dose toxicity

Product: No data available.

Skin corrosion/irritation
Product: Causes skin irritation.

Serious eye damage/eye irritation
Product: Causes serious eye irritation.

Respiratory or skin sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

ETHYL BENZENE	Overall evaluation: 2B. Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ cell mutagenicity

In vitro
Product: No mutagenic components identified

In vivo
Product: No mutagenic components identified

Reproductive toxicity
Product: May damage fertility or the unborn child.

Specific target organ toxicity - single exposure
Product: Narcotic effect. Respiratory tract irritation.

Specific target organ toxicity - repeated exposure
Product: Central nervous system. auditory organs Lungs.

Aspiration hazard
Product: May be fatal if swallowed and enters airways.

Other effects: None known.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish
Product: No data available.

Specified substance(s):

M-XYLENE	LC 50 (Fathead minnow (Pimephales promelas), 96 h): 14.31 - 18.01 mg/l Mortality LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 8.4 mg/l Mortality

P-XYLENE	LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 2.6 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 96 h): 7.2 - 9.9 mg/l Mortality
ETHYL BENZENE	LC 50 (Fathead minnow (Pimephales promelas), 96 h): 9.1 - 15.6 mg/l Mortality LC 50 (Bluegill (Lepomis macrochirus), 96 h): 93 - 211 mg/l Mortality LC 50 (Carp (Leuciscus idus melanotus), 48 h): 44 mg/l Mortality
O-XYLENE	LC 50 (Goldfish (Carassius auratus), 24 h): 13 mg/l Mortality LC 50 (Guppy (Poecilia reticulata), 96 h): 12 mg/l Mortality LC 50 (Bluegill (Lepomis macrochirus), 96 h): 11.6 - 22.4 mg/l Mortality LC 50 (Fathead minnow (Pimephales promelas), 96 h): 11.6 - 22.4 mg/l Mortality LC 50 (Goldfish (Carassius auratus), 96 h): 11.6 - 22.4 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

M-XYLENE	LC 50 (Water flea (Daphnia magna), 48 h): 28.1 - 87.4 mg/l Mortality LC 50 (Brine shrimp (Artemia sp.), 48 h): 5.29 - 11.7 mg/l Mortality
P-XYLENE	LC 50 (Brine shrimp (Artemia sp.), 24 h): 22.1 - 39.4 mg/l Mortality LC 50 (Water flea (Daphnia magna), 48 h): 11.3 - 51.8 mg/l Mortality
ETHYL BENZENE	EC 50 (Water flea (Daphnia magna), 48 h): 1.37 - 4.4 mg/l Intoxication EC 50 (Brine shrimp (Artemia sp.), 48 h): 3.58 - 9.46 mg/l Intoxication LC 50 (Water flea (Daphnia magna), 48 h): 10.6 - 17.2 mg/l Mortality LC 50 (Brine shrimp (Artemia sp.), 48 h): 3.91 - 13.7 mg/l Mortality
O-XYLENE	EC 50 (Water flea (Daphnia magna), 48 h): 0.78 - 2.51 mg/l Intoxication LC 50 (Water flea (Daphnia magna), 48 h): 5.26 - 33.9 mg/l Mortality LC 50 (Brine shrimp (Artemia sp.), 48 h): 13.4 - 31.1 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available on bioaccumulation.

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

M-XYLENE	Log Kow: 3.20

P-XYLENE	Log Kow: 3.15
ETHYL BENZENE	Log Kow: 3.15
O-XYLENE	Log Kow: 3.12

Mobility in soil: The product is insoluble in water and will spread on the water surface.

Other adverse effects: Toxic to aquatic life.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number:	UN 1307
UN proper shipping name:	Xylenes
Transport hazard class(es)	
Class(es):	3
Label(s):	3
Packing group:	III
Marine Pollutant:	No

IMDG

UN number:	UN 1307
UN proper shipping name:	XYLENES
Transport hazard class(es)	
Class(es):	3
Label(s):	3
EmS No.:	F-E, S-D
Packing group:	III
Marine Pollutant:	No

IATA

UN number:	UN 1307
Proper Shipping Name:	Xylenes
Transport hazard class(es):	
Class(es):	3
Label(s):	3
Marine Pollutant:	No
Packing group:	III

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

M-XYLENE	Reportable quantity: 1000 lbs.
P-XYLENE	Reportable quantity: 100 lbs.
ETHYL BENZENE	Reportable quantity: 1000 lbs.
O-XYLENE	Reportable quantity: 1000 lbs.
TOLUENE	Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

X	Acute (Immediate)	X	Chronic (Delayed)	X	Fire		Reactive		Pressure Generating

SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

Chemical identity	RQ
M-XYLENE	1000 lbs.
P-XYLENE	100 lbs.
ETHYL BENZENE	1000 lbs.
O-XYLENE	1000 lbs.
TOLUENE	1000 lbs.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
M-XYLENE	500 lbs
P-XYLENE	500 lbs
ETHYL BENZENE	500 lbs
O-XYLENE	500 lbs
TOLUENE	500 lbs

SARA 313 (TRI reporting)

Chemical identity	Reporting threshold for other users	Reporting threshold for manufacturing and processing
M-XYLENE	10000 lbs	25000 lbs.
P-XYLENE	10000 lbs	25000 lbs.
ETHYL BENZENE	10000 lbs	25000 lbs.
O-XYLENE	10000 lbs	25000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

M-XYLENE	Reportable quantity: 100 lbs.
P-XYLENE	Reportable quantity: 100 lbs.
ETHYL BENZENE	Reportable quantity: 1000 lbs.
O-XYLENE	Reportable quantity: 100 lbs.
TOLUENE	Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US state regulations

US. California Proposition 65

ETHYL BENZENE	Carcinogenic.
TOLUENE	Developmental toxin.
TOLUENE	Female reproductive toxin.

US. New Jersey Worker and Community Right-to-Know Act

M-XYLENE	Listed
P-XYLENE	Listed
ETHYL BENZENE	Listed
O-XYLENE	Listed

US. Massachusetts RTK - Substance List

M-XYLENE	Listed
P-XYLENE	Listed
ETHYL BENZENE	Listed
O-XYLENE	Listed

US. Pennsylvania RTK - Hazardous Substances

M-XYLENE	Listed
P-XYLENE	Listed
ETHYL BENZENE	Listed
O-XYLENE	Listed

US. Rhode Island RTK

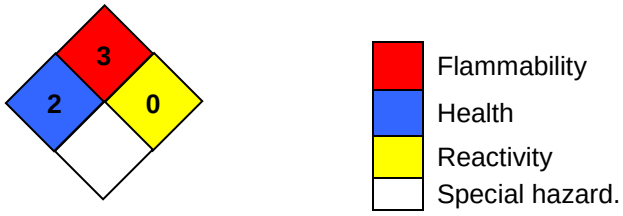
M-XYLENE	Listed
P-XYLENE	Listed
ETHYL BENZENE	Listed
O-XYLENE	Listed

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

16.Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date:	07-10-2014
Revision date:	No data available.
Version #:	1.0
Further information:	No data available.

Disclaimer:

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