

SAFETY DATA SHEET

1. Identification

Product identifier	Mixed Xylene
Other means of identification	
SDS number	412-GHS
Synonyms	xylene (xylol); xylol; methyl toluene; benzene, dimethyl-; dimethylbenzene. See section 16 for complete information.
Recommended use	This product is intended for use as a refinery feedstock, fuel or for use in engineered processes. Use in other applications may result in higher exposures and require additional controls, such as local exhaust ventilation and personal protective equipment.
Recommended restrictions	None known.
Manufacturer/Importer/Supplier/	/Distributor information
Manufacturer/Supplier	Valero Marketing & Supply Company and Affiliates One Valero Way
General Assistance	San Antonio, TX 78269-6000 210-345-4593
E-Mail	CorpHSE@valero.com
Contact Person	Industrial Hygienist
Emergency Telephone	24 Hour Emergency 866-565-5220 1-800-424-9300 (CHEMTREC USA)

2. Hazard(s) identification

Physical hazards	Flammable liquids	Category 3
Health hazards	Acute toxicity, dermal	Category 4
	Acute toxicity, inhalation	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 2B
	Carcinogenicity	Category 2
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
	Specific target organ toxicity, single exposure	Category 3 narcotic effects
	Aspiration hazard	Category 1
Environmental hazards	Hazardous to the aquatic environment, acute hazard	Category 2
OSHA defined hazards	Not classified.	
Label elements		



Signal word Hazard statement

Precautionary statement Prevention Warning

Flammable liquid and vapor. May be fatal if swallowed and enters airways. Harmful in contact with skin. Causes skin irritation. Causes eye irritation. Harmful if inhaled. May cause drowsiness or dizziness. Suspected of causing cancer. Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Use only non-sparking tools. Take precautionary measures against static discharges. Avoid breathing gas/mist/vapors/spray. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Mixed Xylene

Response	In case of fire: Use foam, carbon dioxide, dry powder or water fog for extinction. If swallowed: Immediately call a poison center/doctor. Do NOT induce vomiting. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. Take off contaminated clothing and wash before reuse. Get medical advice/attention if you feel unwell. If exposed or concerned: Call a poison center/doctor.
Storage	Store container tightly closed in well-ventilated place. Keep cool. Store locked up.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Xylene (o, m, p isomers)	1330-20-7	55 - 98
Ethylbenzene	100-41-4	2 - 35

4. First-aid measures

Inhalation	Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Skin contact	Remove contaminated clothing and shoes. Wash off immediately with soap and plenty of water. Get medical attention if irritation develops or persists. Wash clothing separately before reuse. Destroy or thoroughly clean contaminated shoes. If high pressure injection under the skin occurs, always seek medical attention.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention.
Ingestion	Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center. Do not give mouth-to-mouth resuscitation. If vomiting occurs, keep head low so that stomach content does not get into the lungs. Never give anything by mouth to a victim who is unconscious or is having convulsions. Get medical attention immediately.
Most important symptoms/effects, acute and delayed	Irritation. Drowsiness and dizziness.
Indication of immediate medical attention and special treatment needed	In case of shortness of breath, give oxygen. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
General information	If exposed or concerned: get medical attention/advice. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use.
5. Fire-fighting measures	
Suitable extinguishing media	Water spray. Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2).
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter and spread fire.
Specific hazards arising from the chemical	Vapor may cause flash fire. Vapors can flow along surfaces to distant ignition source and flash back. Sensitive to static discharge.
Special protective equipment and precautions for firefighters	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask.

Fire-fighting equipment/instructions	Wear full protective clothing, including helmet, self-contained positive pressure or pressure demand breathing apparatus, protective clothing and face mask. Withdraw immediately in case of rising sound from venting safety devices or any discoloration of tanks due to fire. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Move containers from fire area if you can do it without risk. In the event of fire, cool tanks with water spray. Cool containers exposed to flames with water until well after the fire is out. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn. Vapors may form explosive air mixtures even at room temperature. Prevent buildup of vapors or gases to explosive concentrations. Some of these materials, if spilled, may evaporate leaving a flammable residue. Water runoff can cause environmental damage. Use compatible foam to minimize vapor generation as needed.
Specific methods	Use water spray to cool unopened containers.
6. Accidental release meas	ures
Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Local authorities should be advised if significant spills cannot be contained. Keep upwind. Keep out of low areas. Ventilate closed spaces before entering. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 of the SDS for Personal Protective Equipment.
Methods and materials for containment and cleaning up	ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Extinguish all flames in the vicinity. Keep combustibles (wood, paper, oil, etc.) away from spilled material.
	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible.
	Small Spills: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Cover with plastic sheet to prevent spreading. Collect spillage. Following product recovery, flush area with water. Prevent product from entering drains. Do not allow material to contaminate ground water system. Clean surface thoroughly to remove residual contamination. Wipe up with absorbent material (e.g. cloth, fleece).
	Never return spills in original containers for re-use. Prevent entry into waterways, sewers, basements or confined areas. Stop leak if you can do so without risk. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Dike the spilled material, where this is possible. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Should not be released into the environment. Do not allow material to contaminate ground water system. Prevent product from entering drains.
Environmental precautions	If facility or operation has an "oil or hazardous substance contingency plan", activate its procedures. Stay upwind and away from spill. Wear appropriate protective equipment including respiratory protection as conditions warrant. Do not enter or stay in area unless monitoring indicates that it is safe to do so. Isolate hazard area and restrict entry to emergency crew. Flammable. Review Firefighting Measures, Section 5, before proceeding with clean up. Keep all sources of ignition (flames , smoking, flares, etc.) and hot surfaces away from release. Contain spill in smallest possible area. Recover as much product as possible (e.g. by vacuuming). Stop leak if it can be done without risk. Use water spray to disperse vapors. Spilled material may be absorbed by an appropriate absorbent, and then handled in accordance with environmental regulations. Prevent spilled material from entering sewers, storm drains, other unauthorized treatment or drainage systems and natural waterways. Contact fire authorities and appropriate federal, state and local agencies. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, contact the National Response Center at 1-800-424-9800.
7. Handling and storage	
Precautions for safe handling	Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Wear personal protective equipment. Do not breathe gas/fumes/vapor/spray. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. The product is extremely flammable, and explosive vapor/air mixtures may be formed even at normal room temperatures. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Use non-sparking tools and explosion-proof equipment. When using, do not eat, drink or smoke. Avoid release to the environment.

Flammable liquid storage. Do not handle or store near an open flame, heat or other sources of ignition. This material can accumulate static charge which may cause spark and become an ignition source. The pressure in sealed containers can increase under the influence of heat. Keep container tightly closed in a cool, well-ventilated place. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Туре	Value	
Ethylbenzene (CAS 100-41-4)	PEL	435 mg/m3	
		100 ppm	
Xylene (o, m, p isomers) (CAS 1330-20-7)	PEL	435 mg/m3	
		100 ppm	
US. ACGIH Threshold Limit Valu	es		
Components	Туре	Value	
Ethylbenzene (CAS 100-41-4)	TWA	20 ppm	
Xylene (o, m, p isomers) (CAS 1330-20-7)	STEL	150 ppm	
	TWA	100 ppm	
US. NIOSH: Pocket Guide to Che	emical Hazards		
Components	Туре	Value	
Ethylbenzene (CAS 100-41-4)	STEL	545 mg/m3	
		125 ppm	
	TWA	435 mg/m3	
		100 ppm	
Xylene (o, m, p isomers) (CAS 1330-20-7)	STEL	655 mg/m3	
		150 ppm	
	TWA	435 mg/m3	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
Ethylbenzene (CAS 100-41-4)	0.7 g/g	Sum of mandelic acid and phenylglyoxylic acid	Creatinine in urine	*
Xylene (o, m, p isomers) (CAS 1330-20-7)	1.5 g/g	Methylhippuric acids	Creatinine in urine	*
* - For sampling details, pl	ease see the sourc	e document.		
ppropriate engineering ontrols	ventilation, or	0		n. Use process enclosures, local exhaust borne levels below recommended exposure
dividual protection measur	es, such as perso	nal protective equipment	nt	
Eye/face protection	Wear safety g	glasses. If splash potentia	l exists, wear fu	Ill face shield or chemical goggles.
Skin protection Hand protection	Avoid exposu	re - obtain special instruc	tions before us	e. Wear protective gloves. Protective gloves.
Other		e volumes or in emergend		v suit and boots are recommended when ame retardant protective clothing is

Respiratory protection	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. If workplace exposure limits for product or components are exceeded, NIOSH approved equipment should be worn. Proper respirator selection should be determined by adequately trained personnel, based on the contaminants, the degree of potential exposure and published respiratory protection factors. This equipment should be available for nonroutine and emergency use.
Thermal hazards	Not available.
General hygiene considerations	Consult supervisor for special handling instructions. Avoid contact with eyes. Avoid contact with skin. Keep away from food and drink. Wash hands before breaks and immediately after handling the product. Provide eyewash station and safety shower. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Appearance	Colorless liquid.
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	Aromatic. Benzene-like.
Odor threshold	Not available.
рН	Not available.
Melting point/freezing point	-15.07 °F (-26.15 °C)
Initial boiling point and boiling range	281.93 °F (138.85 °C)
Flash point	80.3 - 89.3 °F (26.9 - 31.9 °C) Closed Cup
Evaporation rate	0.8 (Butyl acetate = 1)
Flammability (solid, gas)	Not available.
Upper/lower flammability or exp	losive limits
Flammability limit - lower (%)	1 %
Flammability limit - upper (%)	7 %
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	3.7
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Very slightly soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	865.94 - 984.02 °F (463.3 - 528.9 °C)
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Molecular formula	C8-H10
Percent volatile	100 %
10. Stability and reactivity	

Reactivity	Not available.
Chemical stability	Stable under normal temperature conditions and recommended use.
Possibility of hazardous	Hazardous polymerization does not occur.
reactions	

Conditions to avoid	Heat, flames and sparks. Ignition sources. Contact with incompatible materials. Do not pressurize, cut, weld, braze, solder, drill, grind or expose empty containers to heat, flame, sparks, static electricity, or other sources of ignition; they may explode and cause injury or death.
Incompatible materials	Strong oxidizing agents. Reducing agents. Acids. Alkalis.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	estion May be fatal if swallowed and enters airways.	
Inhalation	Harmful if inhaled. May cause drowsiness or dizziness.	
Skin contact	Harmful in contact with skin. Causes skin irritation.	
Eye contact	Causes eye irritation.	
Symptoms related to the physical, chemical and	Irritation. Drowsiness and dizziness.	

toxicological characteristics

Acute toxicity

Information on toxicological effects

Harmful if inhaled. Harmful in contact with skin. Harmful if swallowed - may enter lungs if swallowed or vomited.

Components	Species	Test Results	
Ethylbenzene (CAS 100-41-4)	opecies		
Acute			
Dermal			
LD50	Rabbit	> 5000 mg/kg	
2000	Rabbit	17.8 ml/kg	
labolation		T7.0 mikkg	
Inhalation LC50	Mouse	> 8000 ppm, 20 Minutes	
ECSO	Mouse		
		35.5 mg/l	
	Rat	4000 ppm	
		55 mg/l	
Oral			
LD50	Rat	3.5 g/kg	
Xylene (o, m, p isomers) (CAS 13	30-20-7)		
Acute			
Dermal			
LD50	Rabbit	> 5000 ml/kg	
Inhalation			
LC50	Mouse	5300 ppm, 6 Hours	
	Rat	5922 ppm, 4 Hours	
Oral			
LD50	Rat	10 ml/kg	
Skin corrosion/irritation	Causes skin irritation.		
Serious eye damage/eye irritation	Causes eye irritation.		
Respiratory or skin sensitizatio	n		
Respiratory sensitization	Not assigned.		
Skin sensitization	Not assigned.		
Germ cell mutagenicity	Not assigned.		
Carcinogenicity	Suspected of causing cancer.		
IARC Monographs. Overall	Evaluation of Carcinogenicity		
Ethylbenzene (CAS 100-41-4) Xylene (o, m, p isomers) (CAS 1330-20-7)		2B Possibly carcinogenic to humans. 3 Not classifiable as to carcinogenicity to humans.	

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)		
Benzene (CAS 71-43-2)	Cancer	
Reproductive toxicity	Not assigned.	
Specific target organ toxicity - single exposure	 May cause drowsiness or dizziness. 	
Specific target organ toxicity - repeated exposure	Not assigned.	
Aspiration hazard	May be fatal if swallowed and enters airways.	
Chronic effects	Contains organic solvents which in case of overexposure may depress the central nervous system causing dizziness and intoxication.	

12. Ecological information

Ecotoxicity

		Species	Test Besults	
Components	~	Species	Test Results	
Ethylbenzene (CAS 100-41-4	4)			
Aquatic				
Crustacea	EC50	Water flea (Daphnia magna)	1 - 4 mg/l, 48 hours	
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	4 mg/l, 96 hours	
Xylene (o, m, p isomers) (CA Aquatic	S 1330-20-7)			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	8 mg/l, 96 Hours	
Persistence and degradability	No data avai	lable.		
Bioaccumulative potential	No data avai	lable.		
Partition coefficient n-octa Ethylbenzene (CAS 100-41-4 Xylene (o, m, p isomers) (CA	-4) 3.15			
Mobility in soil	S 1330-20-7) 3.2 Not available.			
Other adverse effects	None known.			
13. Disposal consideration	ons			
Disposal instructions	Dispose in accordance with all applicable regulations. This material and its container must be disposed of as hazardous waste. Dispose of this material and its container to hazardous or special waste collection point. Incinerate the material under controlled conditions in an approved incinerator. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container.			
Local disposal regulations	Dispose of in accordance with local regulations.			
Hazardous waste code	D001: Waste Flammable material with a flash point <140 °F U239: Waste Xylene			
US RCRA Hazardous Wast	e U List: Refer	ence		
Benzene (CAS 71-43-2) Toluene (CAS 108-88-3) Xylene (o, m, p isomers))	U019 U220 -7) U239		
Waste from residues / unused products	Dispose in a	ccordance with all applicable regulations	5.	
Contaminated packaging	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Offer rinsed packaging material to local recycling facilities.			
14. Transport information	ı			

DOT

/1	
UN number	UN1307
UN proper shipping name	Xylenes
Transport hazard class(es)	
Class	3
Subsidiary risk	-
Label(s)	3

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	Packing group	
	Special precautions for user	
	Special provisions	B1, IB3, T2, TP1
	Packaging exceptions	150
	Packaging non bulk	203
	Packaging bulk	242
	ATA	
	UN number	UN1307
	UN proper shipping name	Xylenes
	Transport hazard class(es)	Ayienes
	Class	3
	Subsidiary risk	5
	Packing group	
	Environmental hazards	No.
	ERG Code	3
	Special precautions for user	
	MDG	
	UN number	UN1307
	•••••••	XYLENES
	UN proper shipping name Transport hazard class(es)	ATLENES
	Class	2
		3
	Subsidiary risk Packing group	-
	Environmental hazards	111
		Nia
	Marine pollutant EmS	No.
		F-E, S-D
_	Special precautions for user	
	Fransport in bulk according to Annex II of MARPOL 73/78 and	This product is a liquid and when transported in bulk is covered under MARPOL 73/78 Annex II. This product is listed in the IBC Code.
	he IBC Code	Ship type: 2
		Pollution category: Y
	15 Pogulatory information	

15. Regulatory information

US federal regulations This product is hazardous according to OSHA 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.

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

Not regulated.

inot regulated.		
OSHA Specifically Regula	ted Substances (29 CFR 1910.	1001-1050)
Benzene (CAS 71-43-2 CERCLA Hazardous Subs	,	Cancer Central nervous system Blood Aspiration Skin Eye respiratory tract irritation Flammability
CERCLA Hazardous Subs	tance List (40 CFR 302.4)	
Ethylbenzene (CAS 100-41-4)		LISTED
Xylene (o, m, p isomers) (CAS 1330-20-7)		LISTED
Superfund Amendments and F	Reauthorization Act of 1986 (S	ARA)
Hazard categories	Immediate Hazard - Yes Delayed Hazard - Yes Fire Hazard - Yes Pressure Hazard - No Reactivity Hazard - No	
SARA 302 Extremely haza	rdous substance	

Not listed.

SARA 311/312 Hazardous No chemical

Chemical name		CAS number	% by wt.
Xylene (o, m, p isome Ethylbenzene	rs)	1330-20-7 100-41-4	55 - 98 2 - 35
ther federal regulations			
Clean Air Act (CAA) Sect	ion 112 Hazardous Air Pollut	ants (HAPs) List	
Ethylbenzene (CAS 10 Xylene (o, m, p isome Clean Air Act (CAA) Sect		e Prevention (40 CFR	68.130)
Not regulated.			
Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)	Hazardous substance Priority pollutant Toxic pollutant		
Safe Drinking Water Act (SDWA)	0 mg/l 0.005 mg/l		
S state regulations			
US. Massachusetts RTK	- Substance List		
Benzene (CAS 71-43- Ethylbenzene (CAS 10 Toluene (CAS 108-88 Xylene (o, m, p isome	20-41-4) rs) (CAS 1330-20-7) and Community Right-to-Kno 2) 20-41-4) -3) rs) (CAS 1330-20-7) r and Community Right-to-Kn 2) 20-41-4) -3) rs) (CAS 1330-20-7) 20-41-4) rs) (CAS 1330-20-7)		
•			
Benzene (CAS 71 Ethylbenzene (CA Toluene (CAS 10	AS 100-41-4)	eproductive Toxicity ((CRT): Listed substance
ternational Inventories			
Country(s) or region	Inventory name		On inventory (yes/no
Australia	Australian Inventory of Ch		
Canada	Domestic Substances Lis	()	Ye
Canada	Non-Domestic Substance	()	N
China	Inventory of Existing Cher		
Europe	European Inventory of Ex Substances (EINECS)	isting Commercial Che	emical Ye
Europe	European List of Notified	Chemical Substances	(ELINCS) N
Japan	Inventory of Existing and	New Chemical Substar	nces (ENCS) Ye
Korea	Existing Chemicals List (E	ECL)	Ye
New Zealand	New Zealand Inventory		Ye
Philippines	Philippine Inventory of Ch (PICCS)	emicals and Chemical	Substances Ye
United States & Puerto Ric *A "Yes" indicates this produc	t complies with the inventory requi		

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

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

Issue date Revision date Version # NFPA ratings 18-December-2012 04-August-2014 03



Disclaimer

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