established in 1981 megaloid laboratories

5515 North Service Rd. #306
Burlington, Ontario L7L 6G4

Phone: 905-337-7411
Fax: 905-337-1686

megaloid.ca

Responsible Care® Our commitment to sustainability.

RDC Responsible Distribution Canada Leaders in Chemicals and Ingredients

1. PRODUCT IDENTIFICATION

Name: ***Xylene, ortho***

Synonyms: *1,2-dimethylbenzene; 2-methyltoluene; ortho-xylene; o-xylene; 2-xylene & others*

CAS# *95-47-6*

Product Uses: *mfg of phthalic anhydride & other phthalates; mfg of dyes, pharmaceuticals, insecticides; & others*

Supplier Identifier: *Megaloid Laboratories Limited*
5515 North Service Road, Ste 306
Burlington, Ontario, Canada
L7L 6G4
Phone: 905-337-7411 / Fax: 905-337-1686

EMERGENCY INFORMATION ***Call CHEMTREC - (800) 424-9300***

2. HAZARDS

GHS Class *(category)*	***Flammable*** *(3)*	***Acute oral & skin*** *(3)*	***Acute inhalation*** *(3)*	***Skin irritation*** *(2)*	***Aspiration*** *(1)*	***STOT*** *(3)*
Signal Word	***DANGER***					
Hazard Statements	*Flammable liquid & vapour (H226)*	*Harmful if ingested & in contact with skin (H302, H312)*	*Harmful if inhaled (H332)*	*Causes skin irritation (H315)*	*May be fatal if swallowed & enters airway (H304)*	*May cause dizziness or drowsiness (H336)*

Label Pictograms

GHS Precautionary Statements for Labelling

Prevention

P210	Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P240	Ground or bond container and receiving equipment.
P241	Use explosion-proof electrical, ventilating and lighting equipment.

P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P262	Do not get in eyes, on skin or on clothing.
P264	Wash hands thoroughly after handling.
P280	Wear eye protection, protective gloves and clothing of butyl rubber
Response	
P301, P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302, P352	IF ON SKIN: Wash with plenty of soap and water.
P303, P361, P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P304, P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305, P351, P338	IF IN EYES: rinse continuously 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.
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, P364	Take off contaminated clothing and wash it before reuse.
P370, P378	In case of fire: Use water fog, foam, dry chemical or carbon dioxide to extinguish.
Storage	
P403, P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
Disposal	
P501	Dispose of contents and container in accordance with local, regional, national and international regulations.

3. COMPOSITION

Chemical Name:	CAS No.	%	Other Identifiers
O-xylene	*95-47-6*	*100*	*EC # 202-422-2*

4. FIRST AID

Inhalation

Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.

Skin Contact

Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.

Eye Contact

Wash eyes with plenty of water, holding eyelids open. Seek medical assistance if there is any irritation.

Ingestion

Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

First-aid Comments
Inadvertent inhalation of vomited material may seriously damage the lungs. The danger of this is greater than the risk of poisoning through absorption of this relatively low-toxicity substance. The stomach should only be emptied under medical supervision, and after the installation of an airway to protect the lungs.

5. FIRE FIGHTING & FLAMMABILITY

Extinguishing Media

Suitable Extinguishing Media

Foam, dry chemical, water fog, water spray only to cool & dilute, product floats on water - water jet spreads flames

Combustion Products

Carbon monoxide, nitrogen oxides, smoke, part oxidized hydrocarbon fragments including toxic aldehydes

Special Protective Equipment and Precautions for Fire-fighters

Firefighters must wear SCBA. Fire-fighters may enter the area if positive pressure SCBA and full Bunker Gear is worn.

Static Charge Accumulation

readily accumulates a static charge on agitation or pumping which can cause ignition

6. ACCIDENTAL RELEASE MEASURES

Serious Fire Potential:
blanket spill with foam as a precaution against accidental ignition. Take extreme care to avoid sparks – do not operate (turn on OR off) electrical appliances near spill, unless explosion proof.

Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Eliminate all ignition sources. Use grounded, explosion-proof equipment. Increase ventilation to area or move leaking container to a well-ventilated and secure area.

Environmental Precautions

If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas.

Methods and Materials for Containment and Cleaning Up

Leak Precaution: dyke to control spillage and prevent environmental contamination
Handling Spill: Ventilate contaminated area; recover free liquid with suitable pumps; absorb residue on an inert sorbent, sweep & pick up using plastic or aluminium shovel, & store in closed containers for recycling or disposal.

Other Information

Report spills to local health, safety and environmental authorities, as required.

7. HANDLING & STORAGE

Precautions for Safe Handling

Use only non-sparking bronze or aluminium hand tools. All electrical & mechanical equipment (including lighting, switchgear & forklift trucks) used with or around this product must be explosion-proof. Always ground or electrically bond the source container, receiving container & transfer pump before transferring contents. Avoid splashing by ensuring that the product nozzle is below the surface in the receiving container. Empty containers may contain a flammable / explosive vapour. Containers, empty or full, must be tightly sealed unless in use.

Avoid breathing product vapour. Use with adequate ventilation. If dealing with a spill, and ventilation is impossible or impractical, wear a suitable respirator with organic vapour cartridge.

Never cut, drill, weld or grind on or near this container. Avoid contact with skin & wash work clothes frequently. An eye bath must be available near the workplace.

WHEN FILLING *BULK STORAGE* TANKS WITH THIS PRODUCT, IN ADDITION TO NORMAL GROUNDING PROCEDURES, READ THE FOLLOWING:
This product may form an explosive mixture inside a bulk storage tank. Prior to filling a bulk storage tank with this product, consider ventilating the headspace with nitrogen. In addition, consider asking the supplier to put an anti-static additive in the product when you order. If the bulk tank has a floating product level indicator, this should be inspected regularly. The float MUST HAVE a firmly fixed ground wire connecting it to its support cable. This connection must be free of corrosion.
Consult NFPA 77, 2007: "Recommended Practice on Static Electricity"

Conditions for Safe Storage
Store & use in a cool, dry environment, away from sources of ignition & oxidising agents.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

Ontario TWAEV	*100ppm / 433mg/m^3*	**Ontario STEV**	*150ppm / 650mg/m^3*
AGGIH TLV	*100ppm / 433mg/m^3*	**ACGIH STEL**	*150ppm / 650mg/m^3*
OSHA PEL	*100ppm / 433mg/m^3*	**OSHA STEL**	*150ppm / 650mg/m^3*

Ventilation	*mechanical ventilation may be required to control airborne titre; depending on handling procedures*
Hands	*wear "Viton" gloves – other types may also protect; consult supplier to confirm suitability*
Eyes	*Safety glasses with side shields – always protect the eyes*
Clothing	*wear impermeable (above) apron, boots, & long sleeves if there is any danger of splashing*

Appropriate Engineering Controls
The level of protection and types of controls necessary will vary depending upon potential exposure conditions.
Control measures to consider: Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion proof ventilation equipment.
Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

9. PHYSICAL PROPERTIES

Appearance	*Clear colourless liquid.*
Odour	*aromatic (gasoline-like) odour*
Odour threshold	*5.4ppm – good warning properties relative to the TLV*
pH	*none – (does not liberate hydrogen ions when dissolved)*
Melting Point/Freezing Point	*-25.2°C / -13.4°F*
Initial Boiling Point/Range	*144.4°C / 292°F*
Flash Point	*17°C / 63°F (closed cup); 32°C / 90°F (open cup)*
Evaporation Rate	*0.58 (Butyl Acetate =1)*

Flammability (Solid, Gas)	*Not Available*
Upper/Lower Flammability or Explosive Limit	*1% – 6%*
Vapour Pressure	*5mmHg / 0.67kPa (20°C / 68°F)*
Vapour Density (air = 1)	*3.7*
Specific Gravity	*0.880 (20/20°C)*
Water Solubility	*175milligrams per litre (20°C / 68°F). Also soluble in most organic solvents*
Partition Coefficient, n-Octanol/Water (Log Kow)	*3.12*
Auto-ignition Temperature	*463°C / 867°F*
Conversion Factor	*1 ppm = 4.33 mg/ m^3*
Viscosity	*0.81centipoise (20°C / 68°F)*
Physical State	*Liquid*
Molecular Weight	*106 grams per mole*
Molecular Formula	*C8H10*

10. REACTIVITY

Dangerously Reactive *with strong oxidising agents; nitric acid or dichlorohydrantoin can cause explosion; molten sulphur, halogens*
Also Reactive *with attacks some plastics (eg: PVC) and rubbers.*

Chemical Stability
Stable; will not polymerize
Possibility of Hazardous Reactions
Hazardous polymerization will not occur.
Conditions to Avoid
Avoid heat, sparks, open flames and other ignition sources.
Mechanical Impact
Not sensitive

11. TOXICITY

Acute Toxicity	
LD_{50} (oral)	*3000, 3560, 3600, 4300, 4400 & 8400mg/kg (rat), 5440mg/kg (mouse)*
LD50 (skin)	*3160-5010mg/kg (rabbit), >4200mg/kg (rabbit)*
LC50 (inhalation)	*5630ppm (♀rat), 5305ppm (♂rat); 4330, 6350, 6750mg/kg (rat), 4595ppm (mouse)*

Skin Corrosion/Irritation
Moderately irritating; redness, swelling, burning sensation (all rapidly & readily reversible).

Serious Eye Damage/Irritation
Liquid is a mild irritant; vapour irritating above 200ppm to some people.

STOT (Specific Target Organ Toxicity) - Single Exposure

Inhalation
above 100ppm objectionable; above 200ppm irritating; above 300ppm, dizziness, drowsiness, intoxication, nausea; eventual pulmonary oedema if sufficient product is inhaled.
Skin Absorption
some; no toxic effects likely by this route.
Ingestion
dizziness, drowsiness, intoxication, nausea, vomiting may occur if sufficient is ingested; xylene is an aspiration hazard which may cause lung damage, pulmonary oedema, even death

STOT (Specific Target Organ Toxicity) - Repeated Exposure
Prolonged exposure may cause dermatitis due to powerful degreasing action; may damage liver & kidneys (may have been due to other chemicals in the workplace); headaches, insomnia, depression is attributed to xylene vapour exposure (equivocal evidence); hearing loss in rats – also reported in people.

Respiratory and/or Skin Sensitization
not a sensitiser in humans or animals – very few cases of sensitisation have been reported
Carcinogenicity
not considered a tumorigen or a carcinogen in humans or animals

Reproductive Toxicity

Sexual Function and Fertility
fetotoxic in rodents on prolonged maternal exposure to 500ppm; no known effect in humans; xylene can enter human breast milk
Germ Cell Mutagenicity
Not known to be a mutagen.

12. ECOLOGICAL INFORMATION

Bioaccumulation	*cannot bioaccumulate*
Persistence and Degradability	***Biodegradation -*** *biodegrades readily & rapidly in the presence of oxygen; 70% in 10 days in soil; in water, biodegradation ½-life ranges from days to weeks – 52% in 5 days, 100% in 12 days; slow in unacclimated sludge* ***Abiotic Degradation -*** *o-xylene reacts with atmospheric hydroxyl radicals; ½-life in air is 1-2 days*
Mobility in soil, water	*sufficiently water soluble to move quite readily in soil and water*
Aquatic Toxicity	***(very specifically for ortho-Xylene)***
LC50 (Fish, 96hr)	*11mg/litre (Morone saxatillis), 16mg/litre (Pimephelas promelas, Carassius auratus & Catostomus commersoni), 7.6 & 8.1mg/litre (Oncorhynchus mykiss), 9.94mg/litre (Bryconamericus iheringii)*
EC50 (Crustacea, 48hr)	*3.2 & 3.8mg/litre (Daphnia magna), 1.17mg/litre (Ceriodaphnia dubia – 168hr)*
EC50 (Algae)	*55mg/litre (Chlorella vulgaris), 4.2 & 4.7mg/litre (Pseudokirchnerella subcapitata)*
EC50 (Bacteria)	*157 & 175mg/litre (domestic sewage sludge)*

13. DISPOSAL

Water Disposal

Do not flush to sewer, recycle solvent if possible, if local regulations permit, may be put in sanitary landfill, may be incinerated in approved facility.

Containers

Drums should be reused. Recondition and pressure test by a licensed reconditioner prior to re-use.

Pails must be vented and thoroughly dried prior to crushing and recycling.

IBCs (intermediate bulk containers): polyethylene bottle must be pressure tested & recertified at 30 months. Replace at 60 months (5yrs).

Steel containers must be inspected, pressure tested & recertified every 5 years.

Never cut, drill, weld or grind on or near this container, even if empty

14. TRANSPORT CLASSIFICATION

Canada TDG	**PIN**	UN1307	
AND	**Shipping Name**	xylenes	
U.S.A. 49 CFR	**Class & Packing Group**	3, PG III	

Marine Pollutant	Not a Marine Pollutant
ERAP Required	NO
Reportable Quantity	454 kgs / 1000 lbs
E R G No.	129

15. REGULATIONS

Canada DSL	On Inventory
U.S.A. TSCA	On Inventory
Europe EINECS	On Inventory

U.S.A. Regulations

Immediately Dangerous to Life or Health: 900 ppm

OSHA Standards: Permissible Exposure Limit: Table Z-1 8-hr Time Weighted Avg: 100 ppm (435 mg/cu m). /Xylenes (o-, m-, p-isomers)/ Vacated 1989 OSHA PEL TWA 100 ppm (435 mg/cu m); STEL 150 ppm (655 mg/cu m) is still enforced in some states. /Xylene (o-, m-, p-isomers)/

NIOSH Recommendations: Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 100 ppm (435 mg/cu m). Recommended Exposure Limit: 15 Min Short-Term Exposure Limit: 150 ppm (655 mg/cu m).

Threshold Limit Values: 8 hr Time Weighted Avg (TWA): 100 ppm; 15 min Short Term Exposure Limit (STEL): 150 ppm /Xylene (o-, m-, & p-isomers)/ Biological Exposure Index (BEI): Determinant: Methylhippuric acids in urine; Sampling Time: end of shift; BEI: 1.5 g/g creatinine. /Xylenes, technical or commercial grade/ A4; Not classifiable as a human carcinogen. /Xylene (o-,m-, & p-isomers)/

Atmospheric Standards: This action promulgates standards of performance for equipment leaks of Volatile Organic Compounds (VOC) in the Synthetic Organic Chemical Manufacturing Industry (SOCMI). The intended effect of these standards is to require all newly constructed, modified, and reconstructed SOCMI process units to use the best demonstrated system of continuous emission

reduction for equipment leaks of VOC, considering costs, non air quality health and environmental impact and energy requirements. o-Xylene is produced, as an intermediate or a final product, by process units covered under this subpart. Listed as a hazardous air pollutant (HAP) generally known or suspected to cause serious health problems. The Clean Air Act, as amended in 1990, directs EPA to set standards requiring major sources to sharply reduce routine emissions of toxic pollutants. EPA is required to establish and phase in specific performance based standards for all air emission sources that emit one or more of the listed pollutants. 2-Xylene is included on this list.
State Drinking Water Standards: California 1750 ug/L
State Drinking Water Guidelines: Maine 1,400 ug/L /Xylenes/
Clean Water Act Requirements: o-Xylene is designated as a hazardous substance under section 311(b)(2)(A) of the Federal Water Pollution Control Act and further regulated by the Clean Water Act Amendments of 1977 and 1978. These regulations apply to discharges of this substance. This designation includes any isomers and hydrates, as well as any solutions and mixtures containing this substance.
CERCLA Reportable Quantities: Persons in charge of vessels or facilities are required to notify the National Response Center (NRC) immediately, when there is a release of this designated hazardous substance, in an amount equal to or greater than its reportable quantity of 1000 lb or 454 kg. The toll free number of the NRC is (800) 424-8802. The rule for determining when notification is required is stated in 40 CFR 302.4 (section IV. D.3.b).
TSCA Requirements: Pursuant to section 8(d) of TSCA, EPA promulgated a model Health and Safety Data Reporting Rule. The section 8(d) model rule requires manufacturers, importers, and processors of listed chemical substances and mixtures to submit to EPA copies and lists of unpublished health and safety studies. o-Xylene is included on this list. Effective date 10/4/82; Sunset date: 10/4/92.
RCRA Requirements: When xylene is a spent solvent, it is classified as a hazardous waste from a nonspecific source, as stated in 40 CFR 261.31, and must be managed according to State and/or Federal hazardous waste regulations. /Xylenes/ As stipulated in 40 CFR 261.33, when xylene, as a commercial chemical product or manufacturing chemical intermediate or an off-specification commercial chemical product or a manufacturing chemical intermediate, becomes a waste, it must be managed according to Federal and/or State hazardous waste regulations. Also defined as a hazardous waste is any residue, contaminated soil, water, or other debris resulting from the cleanup of a spill, into water or on dry land, of this waste. Generators of small quantities of this waste may qualify for partial exclusion from hazardous waste regulations (40 CFR 261.5). /Xylenes/

16. OTHER INFORMATION

NFPA RATING	Health 1	Flammability 3	Instability 0

Prepared for	*Megaloid Laboratories Limited*	**by**	*Richard Koscher*
Preparation Date:	April 2011		
Revision Dates:	June 2014, June 2017, Feb 2019		

Key to Abbreviations	ACGIH® = American Conference of Governmental Industrial Hygienists AIHA® = AIHA® Guideline Foundation HSDB® = Hazardous Substances Data Bank IARC = International Agency for Research on Cancer NFPA = National Fire Protection Association NIOSH = National Institute for Occupational Safety and Health NIOSH = National Institute for Occupational Safety and Health NTP = National Toxicology Program OSHA = US Occupational Safety and Health Administration RTECS® = Registry of Toxic Effects of Chemical Substances
References	CHEMINFO database. Canadian Centre for Occupational Health and Safety (CCOHS). HSDB® database. US National Library of Medicine. Available from Canadian Centre for Occupational Health and Safety (CCOHS). NIOSH Pocket Guide database. National Institute for Occupational Safety and Health. Available

	from Canadian Centre for Occupational Health and Safety (CCOHS). Registry of Toxic Effects of Chemical Substances (RTECS®) database. Dassault Systèmes/BIOVIA ("BIOVIA"). Available from Canadian Centre for Occupational Health and Safety (CCOHS).
Disclaimer	Megaloid Laboratories Limited provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. Megaloid Laboratories Limited makes no representations or warranties, either expressed or implied, including without limitation any warranties of merchantability, fitness for a particular purpose with respect to the information set forth herein or the product which the information refers. Accordingly, Megaloid Laboratories Limited will not be responsible for damages resulting from the use of or reliance upon this information.