SAFETY DATA SHEET

TEDIA®
High Purity Solvents

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All non-emergency numbers should be directed to Customer Service at 800-PURITY1

XYLENES — SDS No. M0219

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Xylenes
Synonyms: Dimethylbenzene, xylol, methyltoluene
Recommended Use: This product is recommended for laboratory and manufacturing use only. It is not recommended for drug, food or household use.

HAZARDS IDENTIFICATION

Classification:
Flammable Liquids: GHS Category 3
Acute Toxicity, Inhalation: GHS Category 4
Acute Toxicity, Dermal: GHS Category 4
Skin Irritation: GHS Category 2
Eye Irritation: GHS Category 2A
Carcinogenicity: GHS Category 2
Acute Aquatic Hazard: GHS Category 2
Chronic Aquatic Hazard: GHS Category 2

Label Elements
Signal Word: DANGER!
Hazard Statements:
H226 – Flammable liquid and vapor.
H312 – Harmful in contact with skin.
H319 – Causes serious eye irritation.
H332 – Harmful if inhaled.
H351 – Suspected of causing cancer.
H411 – Harmful to aquatic life with long lasting effects.
Precautionary Statements:
P210 – Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P243 – Take precautionary measures against static discharge.

P273 – Avoid release to the environment.
P280 – Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310 – IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340+P312 – IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403+P233 – Store in a well-ventilated place. Keep container tightly closed.
P501 – Dispose of contents/ container to an approved waste disposal plant.

Emergency Overview
Causes irritation to eyes and respiratory tract. Aspiration hazard if swallowed. May be harmful if absorbed thought the skin. May cause central nervous system depression, liver damage, or kidney damage. Causes adverse reproductive and fetal effects in animals. Flammable liquid and vapor. Static electrical hazard. Target Organs: Blood, kidneys, central nervous system, liver, lungs, eyes, skin, and mucous membranes.

HMIS Rating:
Health – 2* Flammability – 3 Physical Hazard – 0 PPE – User supplied
NOTE: HMIS ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. These ratings are based on the inherent properties of this chemical under expected conditions of normal use and are not intended to be used in emergency situations. PPE is determined by the user based on their needs and conditions.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredient	CAS No	Percent	Hazardous
Xylene Isomers	1330-20-7	>90%	Yes
Ethylbenzene	100-41-4	<25%	Yes

4. FIRST-AID MEASURES

Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give supplemental oxygen. If not breathing, begin artificial respiration. Get medical aid.
Ingestion: Aspiration hazard is swallowed. Get medical attention immediately. DO NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.
Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation persists. Wash clothing before reuse. Thoroughly clean shoes before reuse.
Eye Contact: Check for and remove contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.
Notes to Physician: Treat symptomatically and supportively.

5. FIRE FIGHTING MEASURES

Flammability: Flammable liquid and vapor (GHS Category 3)
Auto-ignition Temperature: 527° C (980° F)
Flash Point: 25-32° C (77-90° F)
Flammable Limits: Lower Limit – 1.1 vol %, Upper Limit – 7.0 vol %
Products of Combustion: May decompose into carbon monoxide and carbon dioxide in fire conditions.
Specific Fire Hazards: As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear. Use water spray to keep fire exposed containers cool. Approach fire from upwind to avoid hazardous vapors and toxic decomposition products. Vapors are heavier than air and may travel to a

source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas. Liquid is lighter than water and may travel to a source of ignition and spread fire. May accumulate static electricity.
Specific Explosion Hazards: Not available.
Fire Fighting Media: Water streams may be ineffective and spread the fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.
National Fire Protective Association (Estimated): Health - 2, Flammability - 3, Reactivity - 0
NOTE: NFPA ratings use a numbering scale that ranges from 0 - 4 to indicate the degree of hazard. A value of zero means the chemical presents no hazard while a value of four indicates a high hazard. They are for use by emergency personnel to address the hazards that are presented by short term, acute exposure to this product under fire, spill, or similar emergencies. Ratings involve data and interpretations that may vary from company to company.

6. ACCIDENTAL RELEASE MEASURES

Use water spray to dilute into a non-flammable mixture. Avoid run-off into storm sewers and ditches which lead to waterways. Provide ventilation to the affected area and remove all ignition sources. Vapor suppressing foam may be used. Water spray may reduce vapors but may not prevent ignition in closed spaces. Absorb spilled liquid with sorbent pads, socks, or other inert material such as vermiculite, sand, or earth. Approach the spill from upwind and pick up absorbed material and place it in a suitable container. Always use proper personal protective equipment as described in section 8.

7. HANDLING AND STORAGE

Precautions: Always use proper personal protective equipment as described in section 8. Wash thoroughly after handling. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Remove contaminated clothing and wash before reuse. Empty containers contain product residue (liquid and vapor) and can be dangerous. Keep container tightly closed and away from heat, spark, and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks, or open flames. Use with adequate ventilation. Avoid breathing vapor or mist.
Storage: Keep away from heat, sparks, and flame in a flammables area. Keep container closed when not in use. Keep from contact with oxidizing materials and strong acids. Store in a cool, dry, well-ventilated space and avoid contact with incompatible materials.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls: Use explosion-proof ventilation equipment. Facilities storing or using the material should be equipped with eyewash station and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Personal Protection: Wear protective chemical goggles or appropriate eye protection. Use appropriate protective gloves and protective clothing to prevent skin exposure. A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever possible. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.
Exposure Limits:
Xylene CAS: 1330-20-7
ACGIH – 100 ppm TWA; 150 ppm STEL
NIOSH – 100 ppm TWA 435 mg/m^3 TWA; 160 ppm ST; 655 mg/m^3 ST; 900 ppm IDLH
OSHA Final PELs – 100 ppm TWA 435 mg/m^3 TWA
Ethylbenzene CAS: 100-41-4
ACGIH – 20 ppm TWA; 125 ppm STEL
NIOSH – 125 ppm TWA 435 mg/m^3 TWA; 125 ppm ST; 545 mg/m^3
OSHA Final PELs – 100 ppm TWA 435 mg/m^3 TWA

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State and Appearance: Clear, colorless liquid.
Odor: aromatic odor

Odor Threshold: 1 ppm
Molecular Formula: $C_6H_4(CH_3)_2$
Molecular Weight: 106.17
Auto-ignition Temperature: 527° C (980.6° F)
Flash Point: 25° C (77° F)
Flammable Limits: Lower Limit – 1.1 vol %, Upper Limit – 7.0 vol %
pH: Not available.
Boiling Point: 136-140° C @ 760 mm Hg
Freezing/Melting Point: -34° C
Decomposition Temperature: Not available
Specific Gravity: 0.865 g/cm^3
Vapor Density (Air=1): 3.66
Vapor Pressure: 8.29 mm Hg @ 25° C.
Evaporation Rate (Butyl acetate = 1): 0.7
Viscosity: <32.6 SUS
Solubility: Insoluble
Conductivity: Nonconductive; Conductivity = 0.1 pS/m; Dielectric Constant = 2.38; Relaxation Time Constant = ~100 seconds

10. STABILITY AND REACTIVITY

Stability: Under normal storage conditions, temperature and pressure.
Conditions to Avoid: Ignition sources and excess heat.
Incompatibility with Various Substances: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.
Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Routes of Entry: Inhalation, skin absorption, skin contact
Acute Exposure Hazards*:*

INHALATION HAZARD: High concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness, and coma. Prolonged exposures may result in dizziness and general weakness. Irritation may lead to pneumonitis and pulmonary edema. May cause liver and kidney damage. Causes irritation of the mucous membranes. Exposure may cause blood abnormalities. Odor is not an adequate warning of exposure to xylene.

INGESTION HAZARD: Aspiration hazard. May cause irritation of the digestive tract. May cause central nervous system depression characterized by excitement followed by nausea, headache, dizziness, and unconsciousness. Advanced stages may cause collapse, loss of consciousness, coma, and death from respiratory failure.

SKIN CONTACT HAZARD: May be harmful if absorbed through the skin. Causes skin irritation, defatting, cracking, and dryness.

EYE CONTACT HAZARD: Causes severe eye irritation. Contact with eyes generally causes transient, superficial injury.

Chronic Exposure Hazards: Prolonged or repeated exposure to xylene may cause defatting and dermatitis, reversible eye damage, labored breathing, confusion, dizziness, apprehension, memory loss, headache, tremors, weakness, anorexia, nausea, ringing in the ears, irritability, thirst, mild changes in liver function, kidney impairment, anemia, and hyperplasia (but not destruction) of bone marrow.
Animal Toxicity (Xylenes):

Draize test, rabbit, eye; 87 mg Mild;
Draize test, rabbit, eye; 5 mg/24H Severe;
Draize test, rabbit, skin; 100% Moderate;
Draize test, rabbit, skin; 500 mg/24H Moderate;
Inhalation, rat: LC50 = 5000 ppm/4H;
Oral, mouse: LD50 = 2119 mg/kg;
Oral, rat: LD50 = 4300 mg/kg;

Clear focus. Consistent results. Complete confidence.

Skin, rabbit: LD50 = >1700 mg/kg;

Animal Toxicity (Ethylbenzene):

Draize test, rabbit, eye; 500 mg Severe;
Inhalation, rat: LC50 = 55,000 mg/m^3/2H;
Oral, mouse: LC50 = 35,000 mg/m^3/2H;
Oral, rat: LD50 = 3500 mg/kg;
Skin, rabbit: LD50 = 17800 uL/kg;

Carcinogenicity (Xylenes):

ACGIH: A4, not classifiable as a human carcinogen; IARC: Group 3 – not classifiable.

Carcinogenicity (Ethylbenzene):

ACGIH: A3, confirmed animal carcinogen with unknown relevance to humans; California: carcinogen, initial date 6/11/04; IARC: Group 2B – Possibly carcinogenic to humans.

Epidemiology: 175 workers were 3xposed to 21 ppm of xylene for 7 years. Subjective symptoms, such as anxiety, forgetfulness, inability to concentrate, and dizziness were reported. Xylenes accounted for 70% of the total exposure. Liver and kidney effects were reported.

Teratogenicity: No increased evidence of birth defects was reported in a study of lab workers exposed to xylene during early pregnancy. Exposure to other solvents and chemicals also occurred. An increased incidence of spontaneous abortions was reported. Animal information suggests that xylene is not teratogenic or embryotoxic at levels that are not harmful to the mother.

Reproductive Effects: An increase in menstrual disorders has been reported in women exposed to organic solvents such as benzene, toluene, and xylenes. It is not possible to attribute these effects to xylene in particular.

Mutagenicity: Xylene does not appear to be a mutagen.

Neurotoxicity: Xylene may damage hearing or enhance sensitivity to noise in chronic occupational exposures, probably from a neurotoxic mechanism.

12. ECOLOGICAL INFORMATION

Ecotoxicity:

Fish: rainbow trout: LC50 = 13.5 mg/L; 96 Hr; unspecified;
Fish: rainbow trout: LC50 = 8.5 mg/L; 96 Hr; static conditions;
Fish: goldfish: LD50 = 13 mg/L; 24 Hr; unspecified;
Fish: fathead minnow: LC50 = 46 mg/L; 1 Hr; Static bioassay;
Fish: fathead minnow: LC50 = 16.1 mg/L; 96 Hr; flow-through conditions;
Fish: bluegill: EC50 = 16.1 mg/L; 48 Hr; flow-through conditions;
Water flea: EC50 = 3.82 mg/L; 24 Hr; flow-through conditions;
Photobacterium phosphoreum: EC50 = 0.0084 mg/L; 24 Hr; microtox test

Environmental Fate: Atmosphere): According to a model of gas/particulate partitioning of semi volatile organic compounds in the atmosphere, xylene, which has an experimental vapor pressure of 7.99 mm Hg at 25° C, will exist solely as a vapor in the ambient atmosphere. Vapor-phase xylene is degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals. The atmospheric lifetime of xylene is about 14-26 hours. Ambient levels of xylene are detected in the atmosphere due to large emissions of this compound. Soil: In soil, it will volatilize and leach into groundwater. Little bioconcentration is expected.

13. DISPOSAL CONSIDERATIONS

Material that cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing use or contamination of this product may change the waste management options. Waste generators must decide if discarded material is a hazardous waste. State and local disposal regulations may differ from federal disposal definitions found in 40 CFR 261.3. Dispose of container and unused contents in accordance with federal, state and local requirements. This material is not a “P” listed waste under 40 CFR 261.33. It is not a “U” listed waste.

14. TRANSPORT INFORMATION

US DOT
Proper Shipping Name: Xylenes
Hazard Class: 3
UN Number: UN1307
Packing Group: III

IMDG
Proper Shipping Name: Xylenes
Hazard Class: 3
UN Number: UN1307
Packing Group: III

IATA
Proper Shipping Name: Xylenes
Hazard Class: 3
UN Number: UN1307
Packing Group: III

15. REGULATORY INFORMATION

US Federal Regulations:
CERCLA Hazardous Substances: CAS# 1330-20-7 – 1000 lb final RQ; 454 kg final RQ;
SARA Section 302: Does not have a TPQ
SARA Codes: CAS# 1330-20-7 – immediate, delayed, fire;
Section 313: Xylenes (CAS# 1330-20-7) is reportable under Section 313 and 40 CFR 373.
Clean Air Act: CAS# 1330-20-7 is listed as a hazardous air pollutant (HAP).
Clean Water Act: CAS# 1330-20-7 is listed as listed as a Hazardous Substance.
OSHA: Not considered highly hazardous by OSHA.

US State Regulations:
CAS# 1330-20-7 is on the following state right-to-know lists: New Jersey, Pennsylvania, and Massachusetts.
California Prop 65: this product contains ethylbenzene, a chemical known to the State of California to cause cancer.

16. OTHER INFORMATION

Originally Prepared: 1/1/2006
Last Revised: 07/23/2020 – Updated hazard categories, hazard statements, and precautionary statements in Section 2. Updated exposure limits in Section 8.

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials and the safety and health of employees and customers and the protection of the environment.

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