SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Xylenes, High Purity Chemicals
SYNONYMS: Dimethylbenzene; xylol, methyltoluene; Xylene mixture of isomers
PRODUCT CODES: ES609, ES609-5G

MANUFACTURER: Azer Scientific, Inc.
ADDRESS: 701 Hemlock Rd, Morgantown, PA 19543

CHEMTREC PHONE: 800-424-9300
SUPPORT: 610-524-5810
FAX: 610-901-3046

PRODUCT USE: This product is recommended for laboratory and manufacturing use only. It is NOT recommended for drug, food or household use.
PREPARED BY: CB

SECTION 1 NOTES:

SECTION 2: HAZARDS IDENTIFICATION

GHS CLASSIFICATION: Flammable liquid Category 3; Acute Toxicity-Dermal Category 4; Acute Toxicity-Inhalation Category 4; Skin Corrosion/Irritation Category 2; Serious eye damage/irritation Category 2A; Aspiration Toxicity Category 1; Specific Target Organ Toxicity – single exposure Category 3; Specific Target Organ Toxicity –repeated exposure Category 2; Carcinogenicity category 2
Target Organs: Central nervous system, Eyes, Respiratory system, Skin



Signal Word: Danger!

Hazard Phrases	
H226	Flammable liquid and vapor.
H312	Harmful in contact with skin.
H332	Harmful if inhaled.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H373	May cause damage to organs through prolonged of repeated exposure.
H335+H336	May cause respiratory irritation, and drowsiness or dizziness.
H304	May be fatal if swallowed and enters airways.

Precautionary Phrases	
P201	Obtain special instructions before use.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P260	Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
P280	Wear protective gloves/ eye protection/ face protection.
P264	Wash hands thoroughly after handling.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P362+P364	Take off contaminated clothing and wash it before reuse.

P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301+P310+P331	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Do NOT induce vomiting.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P307+P311	IF exposed: Call a POISON CENTER or doctor/ physician.
P370+P378	In case of fire: Use CO2, dry chemical or foam for extinction.

SECTION 2 NOTES:

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT:	**CAS NO.**	**% WT**
Xylenes (o-, m-, p- isomers)	**1330-20-7**	**80-95**
Ethylbenzene	**100-41-4**	**5-20**

SECTION 3 NOTES:

SECTION 4: FIRST AID MEASURES

EYES: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

SKIN: In case of contact, flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

INGESTION: Call medical doctor or poison control center immediately. Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, have person lean forward to avoid aspiration. Never give anything by mouth to an unconscious person. Get medical attention immediately.

INHALATION: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately

SECTION 4 NOTES:

SECTION 5: FIRE-FIGHTING MEASURES

FLAMMABILITY OF THE PRODUCT: OSHA/NFPA Class IC Flammable Liquid
FLASH POINT: 25-32° C (77-90°F) – closed cup
AUTOIGNITION TEMPERATURE: 527° C (982°F)
UPPER / LOWER FLAMMABILITY LIMITS: Lower Limit – 1.1 vol %, Upper Limit – 7.0 vol %
NFPA HAZARD CLASSIFICATION
HEALTH:2 FLAMMABILITY: 3 REACTIVITY: 0
OTHER:

HMIS HAZARD CLASSIFICATION
HEALTH:2 FLAMMABILITY: 3 REACTIVITY: 0
PROTECTION:

EXTINGUISHING MEDIA: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

NOT SUITABLE: Do not use water jet.
SPECIAL FIRE FIGHTING PROCEDURES: Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst with the risk of a subsequent explosion. Run-off to sewer may create fire or explosion hazard.
HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of carbon expected to be the primary combustion product.
SPECIAL PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: 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 upwind to avoid hazardous vapors and toxic decomposition products.

SECTION 5 NOTES: Vapor may cause flash fire. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back.

SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES:

Small spill and leak: Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8). Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container.

Large spill and leak: Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

SECTION 6 NOTES:

SECTION 7: HANDLING AND STORAGE

HANDLING: Do not get in eyes, on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source.

STORAGE: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container, protected from direct sunlight. Eliminate all ignition sources. Separate from oxidizing materials and strong acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage.

SECTION 7 NOTES:

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS: General mechanical ventilation or laboratory fume hood. Ensure that eyewash stations and quick drench showers are close to the workstation.

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.

EYE PROTECTION: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts. Recommended: splash goggles

SKIN PROTECTION: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: lab coat

HANDS: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: Neoprene

ENVIRONMENTAL EXPOSURE CONTROLS: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

WORK HYGIENIC PRACTICES: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

EXPOSURE GUIDELINES:

Component	Source	Type	Value	Note
Ethyl Benzene	NIOSH	TWA	100 ppm /435 mg/m^3	NIOSH Recommended exposure limit
Ethyl Benzene	ACGIH	TWA	20 ppm	ACGIH Threshold Limit Value
Ethyl Benzene	OSHA	TWA	100 ppm / 435 mg/m^3	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants
Xylene	OSHA	TWA	100 ppm / 435 mg/m^3	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants
Xylene	ACGIH	TWA	100 ppm / 34 mg/m^3	ACGIH Threshold Limit Value
Xylene	ACGIH	STEL	150 ppm	ACGIH Threshold Limit Value

SECTION 8 NOTES:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Clear, colorless
ODOR: Aromatic odor
ODOR THRESHOLD: 1 ppm
PHYSICAL STATE: liquid
pH AS SUPPLIED: Not available
BOILING POINT: 137°C-140°C
MELTING POINT: Not available
FREEZING POINT: -25°C
VAPOR PRESSURE (mmHg): 12.9 lPa (97 mm Hg)
VAPOR DENSITY (AIR = 1): 3.67 [Air=1]
EVAPORATION RATE: 2.1 (butyl acetate=1)
SOLUBILITY IN WATER: Insoluble
MOLECULAR WEIGHT: Mixture
VISCOSITY: Not established

SECTION 9 NOTES:

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Product is stable under normal conditions of use.
CONDITIONS TO AVOID (STABILITY): Avoid heat, sparks, flames, and all other sources of ignition. Direct sunlight.
INCOMPATIBILITY (MATERIAL TO AVOID): Oxidizing agents, strong acids.
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: oxides of carbon.

HAZARDOUS POLYMERIZATION: No hazardous polymerization
CONDITIONS TO AVOID (POLYMERIZATION): N/A

SECTION 10 NOTES:

SECTION 11: TOXICOLOGICAL INFORMATION

Xylenes: Ethyl benzene 1330-20-7: 100-41-4
Product Summary: Epidemiology: 175 workers were exposed 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.

Acute toxicity:
Animal Toxicity (Ethylbenzene)

LC50 Inhalation	Rat	55,000 mg/m^3	2 hours
LD50 Oral	Rat	3500 mg/kg	
LD50 Dermal	Rabbit	17,800 uL/kg	
LC50 Oral	Mouse	35,000 mg/m^3	2 hours
Draize test	Rabbit eye	500 mg	Severe

Animal Toxicity (Xylenes)

LC50 Inhalation	Rat	5,000 mg/m^3	4 hours
LD50 Oral	Rat	4300 mg/kg	
LD50 Dermal	Rabbit	>1700 mg/kg	
LD50 Oral	Mouse	2,119 mg/kg	
Draize test	Rabbit eye	87mg	Mild
Draize test	Rabbit eye	5 mg/24H	Severe
Draize test	Rabbit skin	100%	moderate
Draize test	Rabbit skin	500 mg/24H	Moderate

Respiratory or skin sensitization: no data available
Germ cell mutagenicity: no data available
Carcinogenicity
IARC: (Xylene): Group 3: Not classifiable as to its carcinogenicity to humans
(Ethylbenzene): Group 2B: Possibly carcinogenic to humans
ACGIH: (Xylenes): Group 4, not classifiable as a human carcinogen IARC: Carcinogenicity
(Ethylbenzene): Group A3, confirmed animal carcinogen with unknown relevance to humans
NTP: Not Listed
OSHA: Listed
California: carcinogen, initial date 6/11/04

POTENTIAL HEALTH EFFECTS:
Eyes: Causes eye irritation.
Ingestion: May cause irritation of the digestive tract. May cause central nervous system depression characterized by excitement followed by nausea, headache, and unconsciousness.
Inhalation: Prolonged exposures may result in dizziness and general weakness. Irritation may lead to pneumonitis and pulmonary edema.

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

ROUTES OF ENTRY: Skin/eye contact, inhalation, and ingestion.
CHRONIC HEALTH 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.
TARGET ORGANS: Kidney, Liver, Heart, Central nervous system
SIGNS AND SYMPTOMS OF EXPOSURE: May cause CNS depression, dizziness, nausea, vomiting. Causes skin and eye irritation. If inhaled, may cause breathing difficulties.

SECTION 11 NOTES:

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY:
Ecotoxicity (aquatic and terrestrial, where available):
Xylenes: Ethyl benzene 1330-20-7: 100-41-4
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 = 16.1mg/L; 96 Hr; flow-through conditions
Fish: bluegill: EC50 = 16.1mg/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; 24Hr; microtox test

PERSISTANCE AND DEGRADABILITY: No information available
BIOACCUMULATIVE POTENTIAL: Bioaccumulation is unlikely.
MOBILITY IN SOIL: No data available
PBT and vPvB ASSESSMENT: Not required.

SECTION 12 NOTES:

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:
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. 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.

RCRA HAZARD CLASS: U239

SECTION 13 NOTES:

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION

UN No.	UN1307
Proper Shipping Name	Xylenes
Hazard Class	3
Packing Group	III

TDG

UN No.	UN1307
Proper Shipping Name	Xylenes
Hazard Class	3
Packing Group	III

IATA

UN No.	UN1307
Proper Shipping Name	Xylenes
Hazard Class	3
Packing Group	III

IMDG/IMP

UN No.	UN1307
Proper Shipping Name	Xylenes
Hazard Class	3
Packing Group	III
EMS-No: F-E, S-E	

SECTION 15: REGULATORY INFORMATION

United States
HCS Classification: Flammable liquid, Toxic material, Irritating material, Target organ effects

U.S. Federal regulations:

TSCA 8(a) IUR: Partial exemption
United States inventory (TSCA 8b): Listed on inventory.
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard
SARA 313 Form R – Reporting:
Xylenes (CAS# 1330-20-7) and Ethylbenzene (CAS# 100-41-4) are reportable under section 313 and 40 CFR373.

CERCLA:
CERCLA RQ: CAS# 1330-20-7: 100 lb final RQ, 45.4 kg final RQ: CAS# 100-41-4: 1000 lb final RQ, 454 kg final RQ

DEA List I & II Chemicals
(Precursor Chemicals): Not Listed

RTK STATES: Ethylbenzene CAS-No. 100-41-4 MA, NJ, PA Xylene CAS-No. 1330-20-7 MA, NJ, PA

California Prop. 65
WARNING! This product contains a chemical known to the State of California to cause cancer. Ethylbenzene
CAS-No. 100-41-4
CANADA
WHMIS (Canada): Class B-2: Flammable Liquid
Class D-2A: Very toxic (Teratogenicity/Embryotoxicity)
Class D-2B: Toxic (Skin Irritant)

CEPA DSL / CEPA NDSL: All components are listed or exempted.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

International lists:

Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

SECTION 16: OTHER INFORMATION

National Fire Protection Association (U.S.A.)



DISCLAIMER: This Safety Data Sheet has been prepared in accordance with the Globally Harmonized System for the Classification and Labelling of Chemicals (GHS). To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries makes any warranty of merchantability or any other warranty, expressed or implied, which respect to such information, and we assume no liability resulting from its use. In no event shall Azer Scientific be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages resulting from use of or reliance upon this information.

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