

Safety Data Sheet

Xylenes, Purified

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY

1.1 Product Identifier

Trade Name **Xylenes, Purified**
 Product # 3803668 3803665
 SDS # 110
 SDS Date August 22, 2013

1.2 Relevant Identified Uses of the Substance or Mixture and Uses Advised Against

Product Use: Histology / Cytology procedures, clearing
 Uses Advised Against: All other uses.

1.3 Details of the Supplier of the Substance or Mixture

Manufacturer/Preparer: Leica Biosystems Richmond, Inc. Leica Biosystems Canada, Inc.
 5205 Route 12 83 Terracon Place
 Richmond, IL 60071 Winnipeg, Manitoba R2J 4B3
 800-225-8867 800-665-7425

1.4 Emergency Telephone Number

Emergency Spill Information 1-800- 424-9300 (CHEMTREC)
 +1-703-527-3887 International calls (call collect)
 Other Product Information: 1-800-225-8867

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

CLP/GHS Classification (1272/2008):

Physical:	Health:	Environmental
Flammable Liquid Category 3	Skin Irritant Category 2 Aspiration Hazard Category 1 Acute Inhalation Toxicity Category 4 Acute Dermal Toxicity Category 4 Carcinogen Category 2	Not Hazardous

EU Classification (67/548/EEC): Xn, Xi, R10, R20/21, R38

2.2 Label Elements:

DANGER! Contains xylene, and ethylbenzene



Hazard Phrases

H226	Flammable liquid and vapor
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation
H332	Harmful if inhaled.
H351	Suspected of causing cancer

Precautionary Phrases

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measure against static discharge.
P261	Avoid breathing mist/vapours.
P271	Use only outdoors or in a well-ventilated area.
P264	Wash exposed skin thoroughly after handling.
P280	Wear protective gloves, protective clothing and eye protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P331	Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P362	Take off contaminated clothing and wash before reuse.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P304 + P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P370 + P378	In case of fire: use dry chemical, foam or water spray for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of container/contents to approved disposal site in accordance with all local and national regulations.

2.3 Other Hazards: None

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical Name	CAS Number / EINECS Number / REACH Reg. Number	% (w/w)	EU Classification (67/548/EEC)	CLP/GHS Classification (1272/2008)
Xylene	1330-20-7 215-535-7	< 90	Xn, Xi, R10, R20/21, R38	Flammable Liquid Category 3 (H226), Acute Dermal Toxicity Category 4 (H312), Acute Inhalation Toxicity Category 4 (H332), Skin Irritant Category 2 (H315)
Ethylbenzene	100-41-4 202-849-4	< 20	Xn, F, R11, R20	Flammable Liquid Category 2 (H225) Acute Inhalation Toxicity Category 4 (H332), Carcinogen Category 2 (H351), Aspiration Hazard Category 1 (H304)

See Section 16 for full text of GHS and EU Classifications.

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

First Aid

Eye contact: Immediately flush eye with water for at least 15 minutes while lifting the upper and lower lids. Get medical attention if irritation persists.

Skin contact: Wash thoroughly with soap and water. Get medical attention if irritation develops. Remove contaminated clothing and laundry before reuse.

Inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if irritation persists, or the victim feels unwell.

Ingestion: If swallowed, rinse out mouth with water. Aspiration hazard. DO NOT induce vomiting. If vomiting occurs, keep head below hips to prevent aspiration into the lungs. Never give anything by mouth to a person who is unconscious or drowsy. Get immediate medical attention.

See Section 11 for more detailed information on health effects.

4.2 Most Important symptoms and effects, both acute and delayed: May cause eye, skin and respiratory irritation. Acute exposure to high concentrations can result in CNS effects and irritation. May be harmful by inhalation, or absorption through the skin. At high concentrations, vapor may cause severe breathing difficulties which may be delayed in onset. Acute poisoning and mortality in humans have occurred after very high exposure. Loss of consciousness occurs at approximately 10,000 ppm.

4.3 Indication of any immediate medical attention and special treatment needed: Aspiration hazard. Immediate medical attention is required for ingestion.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing Media:

Use dry chemical, alcohol-resistant foam, carbon dioxide (CO₂), or water fog.

5.2 Special Hazards Arising from the Substance or Mixture

Unusual Fire and Explosion Hazards: Flammable liquid and vapor. Vapors are heavier than air and will travel along surfaces to remove ignition sources. Vapors will collect in low areas. Vapors may be ignited by static sparks.

Combustion Products: Oxides of carbon.

5.3 Advice for Fire-Fighters: Self-contained breathing apparatus and protective clothing should be worn in fighting large fires involving chemicals. Determine the need to evacuate or isolate the area according to your local emergency plan. Use water spray to keep fire exposed containers cool.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Wear appropriate protective equipment. Eliminate all ignition sources and ventilate the area with explosion-proof equipment. Prevent entry into basements or confined areas.

6.2 Environmental Precautions:

Prevent entry in storm sewers and waterways. Report spill as required by local and federal regulations.

6.3 Methods and Material for Containment and Cleaning Up:

Stop spill at the source if it is safe to do so. Absorb with an inert material. Use non-sparking tools and equipment. Collect into a suitable container for disposal.

6.4 Reference to Other Sections:

Refer to Section 8 for personal protective equipment, and Section 13 for disposal information.

SECTION 7: HANDLING and STORAGE

7.1 Precautions for Safe Handling:

Avoid eye and skin contact. Avoid breathing vapors. Use only with adequate ventilation. Wash thoroughly after handling. Remove contaminated clothing and launder before re-use. Keep product away from heat, sparks and all other sources of ignition. Electrically bond and ground transfer equipment, Use appropriately rated electrical equipment in areas where this material is handled and stored. Keep containers closed when not in use.

7.2 Conditions for Safe Storage, Including any Incompatibilities:

Keep product away from heat, sparks and all other sources of ignition. Electrically bond and ground transfer equipment, Use appropriately rated electrical equipment in areas where this material is handled and stored.

Protect containers from physical damage. Store in a cool area. Keep away from excessive heat and open flames. Keep containers closed when not in use. Store away from oxidizers, acids, and alkalis.

Empty containers retain product residues. Do not cut, weld, braze, etc. on or near empty containers. Follow all SDS precautions in handling empty containers

7.3 Specific end use(s):

Industrial uses: Histology / Cytology procedures, clearing.

Professional uses: Formalin neutralizing

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control Parameters:

Chemical Name	US OEL	EU IOEL	UK OEL	Germany OEL
Xylene	100 ppm TWA ACGIH TLV 150 ppm STEL ACGIH TLV 100 ppm TWA OSHA PEL	50 ppm TWA 100 ppm STEL	50 ppm TWA 100 ppm STEL	100 ppm TWA 200 ppm STEL
Ethylbenzene	20 ppm TWA ACGIH TLV 125 ppm STEL ACGIH TLV 100 ppm TWA OSHA PEL	100 ppm TWA 200 ppm STEL	100 ppm TWA 125 ppm STEL	20 ppm TWA 40 ppm STEL

Refer to local or national authority for exposure limits not listed above.

Chemical Name	Biological Limit Value
Xylene	Methylhippuric acids in urine 1.5 g/g creatinine, end of shift (ACGIH)
Ethylbenzene	Sum of mandelic acid and phenylglyoxylic acid in urine 0.7 g/g creatinine, end of shift at end of workweek (ACGIH)

8.2 Exposure Controls:

Recommended Monitoring Procedures: Collection on charcoal tubes with analysis by gas chromatography.

Appropriate Engineering Controls: Use with adequate local exhaust ventilation to maintain exposure levels below the occupational exposure limits. Use explosion-proof equipment where required.

Personal Protective Measures

Eye/face Protection: Wear safety glasses or chemical goggles as needed to avoid eye contact.

Skin Protection: Impervious clothing as needed to prevent skin contact.

Hands: Impervious gloves (butyl or nitrile rubber).

Respiratory Protection: None needed with adequate ventilation. If the occupational exposure limit is exceeded, use an approved organic vapor respirator. Selection of respiratory protection depends on the contaminant type, form and concentration. Select in accordance with OSHA 1910.134 or other applicable regulations and good Industrial Hygiene practice.

Other protection: Suitable washing facilities should be available.

SECTION 9: PHYSICAL and CHEMICAL PROPERTIES

9.1 Information on basic Physical and Chemical Properties

Appearance: Clear liquid

Odor Threshold: 20 ppm

Melting/Freezing Point: -95°C (-139°F)

Flash Point: : 26°C (78°F)

Lower Flammability Limit: 1%

Upper Flammability Limit: 7%

Vapor Density(Air=1): 3.66

Solubility: Insoluble in water

Autoignition Temperature: 498°C (930°F)

Viscosity: Not determined

Oxidizing Properties: None

Molecular Formula: Mixture

Odor: Aromatic hydrocarbon

pH: Neutral

Boiling Point: 137.8°C (280°F)

Evaporation Rate: Not applicable

Vapor Pressure: 9 mmHg @ 25°C

Relative Density: 0.86

Octanol/Water Partition Coefficient: Not available

Decomposition Temperature: Not determined

Explosive Properties: Vapors may be explosive in confined areas.

Specific Gravity (H₂O= 1): 0.86

Molecular Weight: Mixture

9.2 Other Information: None available

SECTION 10: STABILITY and REACTIVITY

10.1 Reactivity: This material is not reactive under normal conditions.

10.2 Chemical Stability: Normally stable.

10.3 Possibility of Hazardous Reactions: Reaction with strong oxidizers may generate heat and cause fire.

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10.4 Conditions to Avoid: Avoid heat, sparks, flames, and all other sources of ignition.

10.5 Incompatible Materials: Oxidizing agents, strong acids, and alkalis.

10.6 Hazardous Decomposition Products: Thermal breakdown of this product during fire or very high heat conditions may evolve the following decomposition products: Oxides of carbon.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on Toxicological Effects:

Potential Health Effects:

Eye Contact: May cause irritation with redness, tearing and swelling.

Skin contact: Causes irritation. Repeated exposure may cause dermatitis. May be harmful if absorbed through the skin with symptoms similar to inhalation.

Inhalation: May cause respiratory tract irritation and central nervous system effects such as dizziness, drowsiness, nausea, headache lightheadedness, stupor, and unconsciousness.

Ingestion: Swallowing may cause gastrointestinal effects, and central nervous system effects including nausea, vomiting, diarrhea, dizziness, drowsiness, and unconsciousness. Aspiration during swallowing or vomiting may cause chemical pneumonia or lung damage.

Acute toxicity:

Xylene: LD50 Oral Rat 3523 mg/kg
LD50 Skin Rabbit 4400 mg/kg
LC50 Inhalation Rat 27.6 -47.7 mg/L/4 hr
Ethylbenzene: LD50 Oral Rat 3500 mg/kg
LD50 Skin Rabbit 17.8 mL/kg
LC50 Inhalation Rat 4000 ppm /4 hr

Skin corrosion/irritation: No data available for mixture. Components are skin irritants.

Eye damage/ irritation: No data available for mixture. Components may irritate eyes.

Respiratory Irritation: No data available for mixture. Vapors are irritating to the respiratory system.

Respiratory Sensitization: No data available for mixture. None of the components are respiratory sensitizers.

Skin Sensitization: No data available for mixture. None of the components are skin sensitizers.

Germ Cell Mutagenicity: No data available for mixture. None of the components are germ cell mutagens.

Carcinogenicity: No data available for mixture. Ethylbenzene is classified as Group 2B: Possible human carcinogen by IARC.

Reproductive Toxicity: No data available for mixture.

Specific Target Organ Toxicity:

Single Exposure: Aspiration during swallowing or vomiting may cause chemical pneumonia or lung damage.

Repeat Exposure: May cause damage to liver, kidneys, blood, and nervous system.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity:

Xylene: 96 hr LC50 rainbow trout 2.6-8.4 mg/L; LC50; Daphnia magna (Water flea) 150 mg/L/ 24 hr
Ethylbenzene: LC50 Pimephales promelas (fathead minnow) 42.3 mg/L/ 96 hr

12.2 Persistence and degradability: Xylene: The biodegradation rate constant for xylenes in an activated sludge inoculum was calculated as 0.2 hours⁻¹, with a half-life of 3.3 hours.

Ethylbenzene: Is biodegraded fairly rapidly by sewage or activated sludge inoculua. As a component of gas oil, it is completely degraded in groundwater in 8 days and seawater in 10 days.

12.3 Bioaccumulative Potential: Xylene: Experimental BCF values ranging from 6 to 23.4 have been measured for the different xylene isomers in eels, clams, and fish. This range of BCF values suggests that bioconcentration in aquatic organisms is low.

Ethylbenzene: BCF of 15 suggest the potential for bioconcentration in aquatic organisms is low.

12.4 Mobility in Soil: Xylene: Expected to have very high to moderate mobility in soil.

Ethylbenzene: Koc estimated to be 520. This estimated Koc value suggests that ethylbenzene is expected to have low mobility in soil.

12.5 Results of PVT and vPvB assessment: Not required.

12.6 Other Adverse Effects: No data available.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

Dispose in accordance with local, state and national regulations.

SECTION 14: TRANSPORTATION INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
US DOT	UN1307	Xylenes	3	III	Packages containing 111lbs or greater are subject to RQ provisions.
Canadian TDG	UN1307	Xylenes	3	III	No
EU ADR/RID	UN1307	Xylenes	3	III	No
IMDG	UN1307	Xylenes	3	III	No
IATA/ICAO	UN1307	Xylenes	3	III	No

14.6 Special Precautions for User: None

14.7 Transport in Bulk According to Annex III MARPOL 73/78 and the IBC Code: Not determined.

SECTION 15: REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

INTERNATIONAL INVENTORIES

EPA TSCA INVENTORY: All of the components are listed on the TSCA inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT: All of the ingredients are listed on the Canadian Domestic Substances List.

EUROPEAN UNION: All of the components of this product are listed on the European Inventory of New and Existing Chemical Substances (EINECS) inventory.

AUSTRALIA: All of the ingredients of this product are listed on the Australian Inventory of Chemical Substances (AICS).

CHINA: All of the ingredients are listed on the Chinese chemical inventory.

KOREA: All of the components of this product are listed on the Korean Existing Chemical List (KECL).

NEW ZEALAND: All of the components of this product are listed on the New Zealand Inventory of Chemicals (NzIoC).

PHILIPPINES: All of the components of this product are listed on the Philippine Inventory of Chemicals and Chemical Substances (PICCS).

JAPAN: All of the components of this product are listed on the Japanese Existing and New Chemical Substances List (ENCS).

U.S. REGULATIONS

OSHA HAZARD CLASSIFICATION: Flammable, Irritant, Target Organ Effects, Carcinogen

CERCLA Section 103: Spills of this product over the RQ (reportable quantity) must be reported to the National Response Center. The RQ for the product, based on the RQ for Xylene (90% maximum) of 100 lbs, is 111 lbs. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

EPA SARA 302: This product does not contain chemicals regulated under SARA Section 302.

EPA SARA 311 HAZARD CLASSIFICATION: Acute Health, Chronic Health, Fire Hazard

EPA SARA 313: This product contains the following chemicals that are regulated under SARA Title III, section 313:

Xylene	1130-20-7	< 90%
Ethylbenzene	100-41-4	< 20%

CALIFORNIA PROPOSITION 65: This product contains the following chemicals which are known to the State of California to cause cancer, reproductive toxicity or birth defects (developmental toxicity): Ethylbenzene (Cancer)

INTERNATIONAL REGULATIONS

WHMIS CLASSIFICATION: Class B-2, Class D-2-A

SECTION 16: OTHER INFORMATION

Revision History: Updated Logo and website.

EU Classes and Risk Phrases for Reference (See Sections 2 and 3)

F Highly Flammable

Xn Harmful

Xi Irritant

R10 Flammable

R11 Highly Flammable

R20 Harmful by inhalation

R20/21 Harmful by inhalation, and in contact with skin.

R38 Irritating to skin.

CLP/GHS Classification and H Phrases for Reference (See Section 3)

H225	Highly flammable liquid and vapor
H226	Flammable liquid and vapor
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation
H332	Harmful if inhaled.
H351	Suspected of causing cancer

NFPA Rating: Health: 2 Fire: 3 Instability: 0
HMIS Rating: Health: 2* Fire: 3 Physical Hazard: 0

This Safety Data Sheet has been prepared in accordance with the REACH regulation in the EU and the Globally Harmonized System for the Classification and Labeling of Chemicals (GHS). It complies with the requirements of the Canadian Controlled Products Regulations and US 29CFR 1910.1200. 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 Leica Biosystems 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.