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SIGMA-ALDRICH

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Material Safety Data Sheet

Version 4.2
Revision Date 02/09/2011
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Xylenes

Product Number : 534056
Brand : Sigma-Aldrich
Product Use : For laboratory research purposes.

Supplier : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Manufacturer : Sigma-Aldrich Corporation
3050 Spruce St.
St. Louis, Missouri 63103
USA

Telephone : +1 800-325-5832
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Emergency Phone # (For both supplier and manufacturer) : (314) 776-6555

Preparation Information : Sigma-Aldrich Corporation
Product Safety - Americas Region
1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable liquid, Carcinogen, Target Organ Effect, Harmful by skin absorption., Irritant

Target Organs

Liver, Kidney, Blood, Eyes, ears, Heart, Bone marrow, Central nervous system

GHS Classification

Flammable liquids (Category 3)
Acute toxicity, Oral (Category 5)
Acute toxicity, Inhalation (Category 4)
Acute toxicity, Dermal (Category 4)
Skin Irritation (Category 2)
Serious eye damage (Category 1)
Acute aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram



Signal word : Danger

Hazard statement(s)

H226 : Flammable liquid and vapour.
H303 : May be harmful if swallowed.
H312 + H332 : Harmful in contact with skin or if inhaled.
H315 : Causes skin irritation.
H318 : Causes serious eye damage.
H401 : Toxic to aquatic life.

Precautionary statement(s)

P280 : Wear protective gloves/ eye protection/ face protection.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMS Classification

Health hazard: 2
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

NFPA Rating

Health hazard: 1
Fire: 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation : May be harmful if inhaled. Causes respiratory tract irritation.
Skin : Causes skin irritation.
Eyes : Causes eye irritation.
Ingestion : May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Xylene mixture of isomers

Formula : C₈H₁₀

CAS-No.	EC-No.	Index-No.	Concentration
Ethylbenzene			
100-41-4	202-849-4	601-023-00-4	<= 25 %
Xylene			
1330-20-7	215-535-7	601-022-00-9	>= 75 %

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Conditions of flammability

Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking.

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

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Components	CAS-No.	Value	Control parameters	Remarks
Xylene	1330-20-7	TWA 100 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	Not classifiable as a human carcinogen. Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
		TWA 100 ppm	USA, ACGIH Threshold Limit Values (TLV)	Not classifiable as a human carcinogen. Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
		STEL 150 ppm	USA, ACGIH Threshold Limit Values (TLV)	Not classifiable as a human carcinogen. Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
		TWA 100 ppm	USA, ACGIH Threshold Limit Values (TLV)	Not classifiable as a human carcinogen. Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
		STEL 150 ppm	USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
		TWA 100 ppm	USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
		STEL 150 ppm	USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
		TWA 100 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		STEL 150 ppm	USA, ACGIH Threshold Limit Values (TLV)	

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Conditions for safe storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Conditions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

7. HANDLING AND STORAGE

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6. ACCIDENTAL RELEASE MEASURES

Hazardous combustion products
Hazardous decomposition products formed under fire conditions. - Carbon oxides

Further information
Use water spray to cool unopened containers.

Components	CAS-No.	Value	Control parameters	Remarks
		TWA 100 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
		STEL 150 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		TWA 100 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	Eye & Upper Respiratory Tract Irritation Central Nervous System Impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen. Agents which cause concern that they could be carcinogenic for humans but which cannot be assessed conclusively because of a lack of data. In vitro or animal studies do not provide indications of carcinogenicity which are sufficient to classify the agent into one of the other categories.
		TWA 100 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		STEL 150 ppm	USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
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		STEL 150 ppm	USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
		TWA 100 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		STEL 150 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		TWA 100 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	Ethylbenzene
		STEL 150 ppm	USA, OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000	
		TWA 100 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		STEL 150 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		TWA 100 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	Central Nervous System Impairment Upper Respiratory Tract Irritation Eye Irritation Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans: The agent is carcinogenic in experimental animals at a relatively high dose, by routes) of administration, at sites), of histologic type(s), or by mechanism(s) that may not be relevant to worker exposure. Available epidemiologic studies do not confirm an increased risk of cancer in exposed humans. Available evidence does not suggest that the agent is likely to cause cancer in humans except under uncommon or unlikely routes or levels of exposure.
		STEL 125 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		TWA 100 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		STEL 125 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		TWA 100 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		STEL 125 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		TWA 100 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		STEL 125 ppm	USA, Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants	
		TWA 100 ppm	USA, ACGIH Threshold Limit Values (TLV)	
		STEL 125 ppm	USA, ACGIH Threshold Limit Values (TLV)	

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Tightly fitting safety goggles. Faceshield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	clear, liquid
Colour	colourless

Safety data

pH	no data available
Melting point/freezing point	< 0 °C (< 32 °F)
Boiling point	136 - 140 °C (277 - 284 °F) at 1,013 hPa (760 mmHg)
Flash point	25 °C (77 °F) - closed cup
Ignition temperature	464 °C (867 °F)
Autoignition temperature	no data available
Lower explosion limit	1.1 %(V)
Upper explosion limit	7 %(V)
Vapour pressure	24 hPa (18 mmHg) at 37.70 °C (99.86 °F)
Density	0.865 g/cm ³ at 20 °C (68 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	3.67 - (Air = 1.0)
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY**Chemical stability**

Stable under recommended storage conditions.

Possibility of hazardous reactions

Vapours may form explosive mixture with air.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION**Acute toxicity****Oral LD50**

no data available

Inhalation LC50

no data available

Dermal LD50

no data available

Other information on acute toxicity

no data available

Skin corrosion/irritation

no data available

Serious eye damage/eye irritation

Eyes: no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Ethylbenzene)

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Xylene)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

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Specific target organ toxicity - single exposure (Globally Harmonized System)
 no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
 no data available

Aspiration hazard
 no data available

Potential health effects

Inhalation
 May be harmful if inhaled. Causes respiratory tract irritation.

Skin
 Causes skin irritation.

Eyes
 Causes eye irritation.

Signs and Symptoms of Exposure
 To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
 no data available

Additional information
 RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity
 no data available

Persistence and degradability
 no data available

Bioaccumulative potential
 no data available

Mobility in soil
 no data available

PBT and vPvB assessment
 no data available

Other adverse effects
 An environmental hazard cannot be excluded in the event of professional handling or disposal.

Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

Product
 Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in lighting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
 Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
 UN number: 1307 Class: 3
 Proper shipping name: Xylenes
 Reportable Quantity (RQ): 100 lbs
 Marine pollutant: No
 Poison Inhalation Hazard: No

Packing group: III

15. REGULATORY INFORMATION

HMDS
 UN number: 1307 Class: 3
 Proper shipping name: XYLENES
 Marine pollutant: No

Packing group: III

EMS-No: F-E, S-D

IATA

UN number: 1307 Class: 3
 Proper shipping name: Xylenes

Packing group: III

OSHA Hazards
 Flammable liquid, Carcinogen, Target Organ Effect, Harmful by skin absorption., Irritant

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

CAS-No. 1330-20-7
 Xylene

Revision Date 1989-08-11

CAS-No. 100-41-4
 Ethylbenzene

Revision Date 2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

CAS-No. 1330-20-7
 Xylene

Revision Date 1989-08-11

CAS-No. 100-41-4
 Ethylbenzene

Revision Date 2007-07-01

Pennsylvania Right To Know Components

CAS-No. 1330-20-7
 Xylene

Revision Date 1989-08-11

CAS-No. 100-41-4
 Ethylbenzene

Revision Date 2007-07-01

New Jersey Right To Know Components

CAS-No. 1330-20-7
 Xylene

Revision Date 1989-08-11

CAS-No. 100-41-4
 Ethylbenzene

Revision Date 2007-07-01

California Prop. 65 Components

WARNINGS! This product contains a chemical known to the State of California to cause cancer.

CAS-No. 100-41-4
 Ethylbenzene

Revision Date 2007-09-28

16. OTHER INFORMATION

Further information
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 The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.