

Safety Data Sheet

Creation Date 20-Mar-2009

Revision Date 20-Mar-2009

Revision Number: 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name Shandon Xylene

Cat No. 9990501, 9990502, 9990503

Synonyms No information available.

Recommended Use Laboratory chemicals

Company Richard Allan Scientific
A Subsidiary of Thermo Fisher Scientific
4481 Campus Drive
Kalamazoo, MI 49008
Tel: (800) 522-7270

Emergency Telephone Number
Chemtrec US: (800) 424-9300
Chemtrec EU: (202) 483-7616

2. HAZARDS IDENTIFICATION

WARNING!

Emergency Overview

Flammable liquid and vapor. Possible cancer hazard. May cause cancer based on animal data. Harmful if absorbed through skin or if inhaled. Irritating to eyes and skin. May cause irritation of respiratory tract. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Appearance Clear. **Physical State** Liquid. **Odor** aromatic.

Target Organ Effects Central nervous system (CNS), Eyes, Respiratory system, Skin, Liver, Kidney, Blood

Potential Health Effects

Acute Effects

Principle Routes of Exposure

Eyes	Irritating to eyes.
Skin	Harmful in contact with skin. Irritating to skin.
Inhalation	Harmful by inhalation. May cause irritation of respiratory tract.
Ingestion	May be harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic Effects

Possible cancer hazard based on tests with laboratory animals. Experiments have shown reproductive toxicity effects on laboratory animals. Tumorigenic effects have been reported in experimental animals.. May cause adverse liver effects. May cause adverse kidney effects.

See Section 11 for additional Toxicological information.

Aggravated Medical Conditions Central nervous system disorders. Preexisting eye disorders. Skin disorders.

3. COMPOSITION/INFORMATION ON INGREDIENTS**Haz/Non-haz**

Component	CAS-No	Weight %
Xylenes (o-, m-, p- isomers)	1330-20-7	85
Ethyl benzene	100-41-4	10-15
Toluene	108-88-3	0-0.5
Benzene	71-43-2	0-0.01

4. FIRST AID MEASURES

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device.. Call a physician or Poison Control Center immediately.
Ingestion	Do not induce vomiting. Call a physician or Poison Control Center immediately.
Notes to Physician	Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Flash Point	27.7°C / 81.9°F
Method	No information available.
Autoignition Temperature	527°C / 980.6°F
Explosion Limits	
Upper	7.0 Vol %
Lower	1.1 Vol %
Suitable Extinguishing Media	CO ₂ , dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.
Unsuitable Extinguishing Media	Water may be ineffective. This material is lighter than water and insoluble in water. The fire could easily be spread by the use of water in an area where the water cannot be contained..
Hazardous Combustion Products	No information available.
Sensitivity to mechanical impact	No information available.
Sensitivity to static discharge	No information available.

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA**Health 2****Flammability 3****Instability 0****Physical hazards N/A****6. ACCIDENTAL RELEASE MEASURES****Personal Precautions**

Wear self-contained breathing apparatus and protective suit. Remove all sources of ignition. Evacuate personnel to safe areas. Do not get in eyes, on skin, or on clothing. Take precautionary measures against static discharges.

Environmental Precautions

Should not be released into the environment.

Methods for Containment and Clean Up

Remove all sources of ignition. Soak up with inert absorbent material. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. Keep in suitable and closed containers for disposal.

7. HANDLING AND STORAGE**Handling**

Use only under a chemical fume hood. Use explosion-proof equipment. Use only non-sparking tools. Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharges. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Flammables area.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**Engineering Measures**

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Xylenes (o-, m-, p- isomers)	TWA: 100 ppm STEL: 150 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 435 mg/m ³ (Vacated) STEL: 150 ppm (Vacated) STEL: 655 mg/m ³ TWA: 100 ppm TWA: 435 mg/m ³	

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Ethyl benzene	TWA: 100 ppm STEL: 125 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 435 mg/m ³ (Vacated) STEL: 125 ppm (Vacated) STEL: 545 mg/m ³ TWA: 100 ppm TWA: 435 mg/m ³	IDLH: 800 ppm TWA: 435 mg/m ³ TWA: 100 ppm STEL: 545 mg/m ³ STEL: 125 ppm
Toluene	TWA: 20 ppm	(Vacated) TWA: 100 ppm (Vacated) TWA: 375 mg/m ³ Ceiling: 300 ppm (Vacated) STEL: 150 ppm (Vacated) STEL: 560 mg/m ³ TWA: 200 ppm	IDLH: 500 ppm TWA: 100 ppm TWA: 375 mg/m ³ STEL: 560 mg/m ³ STEL: 150 ppm
Benzene	TWA: 0.5 ppm STEL: 2.5 ppm Skin	(Vacated) TWA: 10 ppm Ceiling: 25 ppm (Vacated) STEL: 50 ppm (Vacated) Ceiling: 25 ppm TWA: 1 ppm TWA: 10 ppm STEL: 5 ppm	IDLH: 500 ppm TWA: 0.1 ppm STEL: 1 ppm

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Xylenes (o-, m-, p- isomers)	TWA: 100 ppm TWA: 434 mg/m ³ STEL: 150 ppm STEL: 651 mg/m ³	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 150 ppm STEL: 655 mg/m ³	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 150 ppm STEL: 650 mg/m ³
Ethyl benzene	TWA: 100 ppm TWA: 434 mg/m ³ STEL: 125 ppm STEL: 543 mg/m ³	TWA: 435 mg/m ³ TWA: 100 ppm STEL: 125 ppm STEL: 545 mg/m ³	TWA: 100 ppm TWA: 435 mg/m ³ STEL: 125 ppm STEL: 540 mg/m ³
Toluene	TWA: 188 mg/m ³ TWA: 50 ppm STEL: 150 ppm STEL: 565 mg/m ³ Skin	TWA: 50 ppm TWA: 188 mg/m ³	TWA: 50 ppm
Benzene	TWA: 1 ppm TWA: 3 mg/m ³ STEL: 15.5 mg/m ³ STEL: 5 ppm	TWA: 3.2 mg/m ³ TWA: 1 ppm STEL: 16 mg/m ³ STEL: 5 ppm	TWA: 0.5 ppm STEL: 2.5 ppm

NIOSH IDLH: Immediately Dangerous to Life or Health

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State

Liquid

Appearance

Clear

Odor

aromatic

Odor Threshold

No information available.

pH

Not applicable

Vapor Pressure

9 mmHg @ 25°C

Vapor Density

3.66 (Air = 1.0)

Viscosity

< 32.6 SUS

Boiling Point/Range

136.67 - 143.33°C / 278 - 289.9°F

9. PHYSICAL AND CHEMICAL PROPERTIES

Melting Point/Range	-47.22°C / -53°F
Decomposition temperature °C	No information available.
Flash Point	27.7°C / 81.9°F
Evaporation Rate	No information available.
Specific Gravity	0.87
Solubility	insoluble
log Pow	No data available
Molecular Formula	Solution

10. STABILITY AND REACTIVITY

Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products. Heat, flames and sparks.
Incompatible Materials	Strong oxidizing agents, Strong acids
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂)
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions .	None under normal processing.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Xylenes (o-, m-, p- isomers)	4300 mg/kg (Rat)	1700 mg/kg (Rabbit)	47635 mg/L (Rat) 4 h 5000 ppm (Rat) 4 h
Ethyl benzene	3500 mg/kg (Rat)	15354 mg/kg (Rabbit)	17.2 mg/L (Rat) 4 h
Toluene	636 mg/kg (Rat)	8390 mg/kg (Rabbit)	12.5 mg/L (Rat) 4 h 26700 ppm (Rat) 1 h
Benzene	1800 mg/kg (Rat)	Not listed	13050 - 14380 ppm (Rat) 4 h

Irritation Irritating to eyes and skin

Toxicologically Synergistic Products No information available.

Chronic Toxicity

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	ACGIH	IARC	NTP	OSHA	Mexico
Ethyl benzene	A3	Group 2B	Not listed	X	Not listed
Benzene	A1	Group 1	Known	X	A2

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Animal Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

Group 2A - Probably Carcinogenic to Humans

Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)

Known - Known Carcinogen

Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens

A1 - Confirmed Human Carcinogen

A2 - Suspected Human Carcinogen

A3 - Confirmed Animal Carcinogen

A4 - Not Classifiable as a Human Carcinogen

A5 - Not Suspected as a Human Carcinogen

Sensitization

No information available.

Mutagenic Effects

Mutagenic effects have occurred in experimental animals..

Reproductive Effects

Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects

Developmental effects have occurred in experimental animals.

Teratogenicity

Teratogenic effects have occurred in experimental animals..

Other Adverse Effects

Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information..

Endocrine Disruptor Information

No information available

12. ECOLOGICAL INFORMATION**Ecotoxicity**

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Xylenes (o-, m-, p- isomers)	Not listed	LC50= 13.4 mg/L Pimephales promelas 96 h LC50= 16.1 mg/L Lepomis macrochirus 96 h LC50= 26.7 mg/L Pimephales promelas 96 h LC50= 8.05 mg/L Oncorhynchus mykiss 96 h	EC50 = 0.0084 mg/L 24 h	LC50 = 0.6 mg/L 48 h EC50 = 3.82 mg/L 48 h

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Ethyl benzene	EC50 = 4.6 mg/L 72 h EC50 > 438 mg/L 96 h	LC50= 14.0 mg/L Oncorhynchus mykiss 96 h LC50= 150.0 mg/L Lepomis macrochirus 96 h LC50= 32 mg/L Lepomis macrochirus 96 h LC50= 4.2 mg/L Oncorhynchus mykiss 96 h LC50= 48.5 mg/L Pimephales promelas 96 h LC50= 9.09 mg/L Pimephales promelas 96 h LC50= 9.6 mg/L Poecilia reticulata 96 h	EC50 = 9.68 mg/L 30 min EC50 = 96 mg/L 24 h	EC50 1.8 - 2.4 mg/L 48 h
Toluene	EC50 > 433 mg/L 96 h	LC50= 13 mg/L Lepomis macrochirus 96 h LC50= 24.0 mg/L Lepomis macrochirus 96 h LC50= 24.0 mg/L Oncorhynchus mykiss 96 h LC50= 25 mg/L Pimephales promelas 96 h	EC50 = 19.7 mg/L 30 min	EC50 = 11.3 mg/L 48 h EC50 = 310 mg/L 48 h
Benzene	EC50 = 29 mg/L 72 h	LC50= 12.6 mg/L Pimephales promelas 96 h LC50= 22 mg/L Lepomis macrochirus 96 h LC50= 28.6 mg/L Poecilia reticulata 96 h LC50= 5.3 mg/L Oncorhynchus mykiss 96 h	Not listed	EC50 = 10 mg/L 48 h EC50 = 356 mg/L 48 h

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available

Mobility .

Component	log Pow
Xylenes (o-, m-, p- isomers)	2.77 - 3.15
Ethyl benzene	3.118
Toluene	2.65
Benzene	1.83

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Xylenes (o-, m-, p- isomers) - 1330-20-7	waste number U239 (Ignitable waste, Toxic waste)	-
Toluene - 108-88-3	waste number U220	-
Benzene - 71-43-2	waste number U019 (Ignitable waste, Toxic waste)	-

14. TRANSPORT INFORMATION

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DOT

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/IMO

UN-No	UN1307
Proper Shipping Name	XYLENES
Hazard Class	3
Packing Group	III

15. REGULATORY INFORMATION

All of the components in the product are on the following Inventory lists: All of the components in the product are on the following Inventory lists:

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	CHINA	KECL
Xylenes (o-, m-, p- isomers)	Present	X	-	215-535-7	-		X	X	X	X	KE-35427 X
Ethyl benzene	T	X	-	202-849-4	-		X	X	X	X	KE-13532 X
Toluene	Present	X	-	203-625-9	-		X	X	X	X	KE-33936 X
Benzene	Present	X	-	200-753-7	-		X	X	X	X	KE-02150 X

Legend:

X - Listed

E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.

F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.

N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.

P - Indicates a commenced PMN substance

R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule

T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.

XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B)).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.

Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Xylenes (o-, m-, p- isomers)	1330-20-7	85	1.0
Ethyl benzene	100-41-4	10-15	0.1
Toluene	108-88-3	0-0.5	1.0
Benzene	71-43-2	0-0.01	0.1

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Xylenes (o-, m-, p- isomers)	X	100 lb	-	-
Ethyl benzene	X	1000 lb	X	X
Toluene	X	1000 lb	X	X
Benzene	X	10 lb	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Xylenes (o-, m-, p- isomers)	X	-	-
Ethyl benzene	X	-	-
Toluene	X	-	-
Benzene	X	-	-

OSHA

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Benzene	0.5 ppm Action Level 1 ppm TWA 5 ppm STEL	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Xylenes (o-, m-, p- isomers)	100 lb	-
Ethyl benzene	1000 lb	-
Toluene	1000 lb	-
Benzene	10 lb	-

California Proposition 65

This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL
Ethyl benzene	100-41-4	Carcinogen	-
Toluene	108-88-3	Developmental	-
Benzene	71-43-2	Carcinogen Developmental Male Reproductive	13 µg/day 6.4 µg/day

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Xylenes (o-, m-, p- isomers)	X	X	X	X	X
Ethyl benzene	X	X	X	X	X
Toluene	X	X	X	X	X
Benzene	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): Y

DOT Marine Pollutant N

DOT Severe Marine Pollutant N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Serious risk, Grade 3

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

B2 Flammable liquid

D1B Toxic materials

D2A Very toxic materials

D2B Toxic materials



16. OTHER INFORMATION

Prepared By Regulatory Affairs
Creation Date 20-Mar-2009
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Revision Summary "****", and red text indicates revision

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS