

CORCO CHEMICAL CORPORATION

Manufacturers of ACS Reagents and Semiconductor Grade Chemicals

SAFETY DATA SHEET

XYLENE

1. IDENTIFICATION

Product identifier: XYLENE

Product Code Number: 2400

Company Identification:

Corco Chemical Corporation
299 Cedar Lane
Fairless Hills, PA 19030
Phone: 215-295-5006
Fax: 215-295-0781

24 Hour Emergency Telephone
Number:

CHEMTREC (U.S.): 1-800-424-9300
CHEMTREC (Outside U.S. 1-703-527-3887)

Trade Name:

XYLENE

Synonyms:

Dimethylbenzene, xylol,
methyl toluene

Chemical Formula:

$C_6H_4(CH_3)_2$

Product Use:

Process chemical, Laboratory and
scientific research and development

2. HAZARD(S) IDENTIFICATION

Physical hazards:

Flammable liquids

Category 2

Health hazards:

Acute toxicity, dermal

Category 4

Skin corrosion/irritation

Category 2

Serious eye damage/eye irritation

Category 2A

Carcinogenicity

Category 2

Reproductive toxicity

Category 1B

Specific target organ toxicity,
single exposure

Category 1
(central nervous
system, kidney,
liver,
respiratory
system)

Specific target organ toxicity,
single exposure

Category 3
narcotic effects

Specific target organ toxicity, repeated
exposure

Category 1
(nervous system,
respiratory
system)

OSHA hazard(s): Not classified

Label elements



Signal word **Danger**

Hazard statement Highly flammable liquid and vapor. Harmful in contact with skin. Causes skin irritation. Causes serious eye irritation. May cause drowsiness or dizziness. Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs (central nervous system, kidney, liver, respiratory system). Causes damage to organs (nervous system, respiratory system) through prolonged or repeated exposure. Harmful to aquatic life. Harmful to aquatic life with long lasting effects.

Precautionary statement:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only outdoors or in a well-ventilated area. Keep container tightly closed. Use spark-proof tools and explosion-proof equipment. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe mist or vapor. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/protective clothing/eye protection/face protection.

Response: Eliminate all ignition sources if safe to do so. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If exposed or concerned: Get medical advice/attention. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Get medical advice/attention. In case of fire: Use appropriate media for extinction.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Emergency Overview: Causes irritation to eyes and respiratory tract. Aspiration hazard if swallowed. May be harmful if absorbed through 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.

Disposal: Dispose of contents/container to an approved incineration plant.

3. Composition/information on ingredients

<u>Ingredient</u>	<u>CAS Number</u>	<u>Percent</u>	<u>Hazardous</u>
Xylene	1330-20-7	> 75%	Yes
Ethyl Benzene	100-41-4	< 25%	Yes

4. First-aid measures

Inhalation: Move to fresh air. Call a POISON CENTER or doctor/physician if you feel unwell.

Skin contact: Take off immediately all contaminated clothing. Wash off with soap and plenty of water. Call a POISON CENTER or doctor/physician if you feel unwell. For minor skin contact, avoid spreading material on unaffected skin.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.

Ingestion: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.

Most important symptoms/effects, acute and delayed: Irritation of eyes and mucous membranes. Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Narcosis. Decrease in motor functions. Behavioral changes.

Edema. Liver enlargement. Jaundice. Proteinuria. Irritant effects. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed: Keep victim under observation. Symptoms may be delayed. Provide general supportive measures and treat symptomatically.

General information: Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. IF exposed or concerned: Get medical advice/attention. Wash contaminated clothing before reuse.

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.

Environmental precautions: Contact local authorities in case of spillage to drain/aquatic environment. Avoid discharge into drains, water courses or onto the ground. Avoid release to the environment. Use appropriate containment to avoid environmental contamination. Prevent further leakage or spillage if safe to do so. Do not contaminate water.

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: Store locked up. Keep away from heat, sparks and open flame. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Store in cool place. Eliminate sources of ignition. Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity. Store in a well-ventilated place. Keep container tightly closed. Keep in an area equipped with sprinklers. Keep out of the reach of children. Store in a cool, dry place out of direct sunlight.

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:

ACGIH – 100 ppm TWA; 150 ppm STEL

NIOSH – 100 ppm TWA 435 mg/m³ TWA; 160 ppm ST; 655 mg/m³ ST; 900 ppm IDLH

OSHA Final PELs – 100 ppm TWA 435 mg/m³ TWA

General hygiene considerations: When using, do not eat, drink or smoke. Avoid contact with eyes. Avoid contact with skin. Avoid contact with clothing. Wash hands before breaks and immediately after handling the product. Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State and Appearance:	Clear, colorless liquid.
Odor:	Aromatic odor
Odor Threshold:	1 ppm
Molecular Formula:	C ₆ H 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
Partition coefficient (n-octanol/water):	3.1 – 3.2
Flammability class:	Flammable IB estimated

Flash point class:
VOC (Weight %)

Flammable IB
100 %

10. Stability and reactivity

Reactivity: Not available.

Chemical stability Risk of explosion: Stable at normal conditions.

Possibility of hazardous reactions: Hazardous polymerization does not occur.

Conditions to avoid: Heat, flames and sparks. Avoid temperatures exceeding the flash point.

Incompatible materials: Strong oxidizing agents, strong acids, acetic acid, and nitric acid and halogens.

Hazardous decomposition products: Irritants. Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

11. Toxicological information

Information on likely routes of exposure:

Ingestion: Not available.

Inhalation: Vapors have a narcotic effect and may cause headache, fatigue, dizziness and nausea. Due to lack of data the classification is not possible.

Skin contact: Harmful in contact with skin.

Eye contact: Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics:

Narcosis. Edema. Liver enlargement. Jaundice. Proteinuria. Behavioral changes.

Decrease in motor functions. Irritant effects. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Information on toxicological effects: Acute toxicity Harmful in contact with skin.

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;

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

Animal Toxicity (Ethyl benzene):

Draize test, rabbit, eye; 500 mg Severe;

Inhalation, rat: LC50 = 55,000 mg/m³/2H;

Oral, mouse: LC50 = 35,000 mg/m³/2H;

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 (Ethyl benzene):

ACGIH: A3, confirmed animal carcinogen with unknown relevance to humans;

California: carcinogen, initial date 6/11/04;

NTP: Not listed; IARC: Group 2B carcinogen.

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.

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 25o 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.

Bioaccumulative potential: Not available.
Mobility in soil: Not available.
Other adverse effects: Not available.
Partition coefficient n-octanol / water (log Kow)
Xylenes 3.12 - 3.2
Ethyl Benzene 3.15

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.

Hazardous waste code D001: Waste Flammable material with a flash point <140 F.

14. Transportation Information

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

DOT

IMDG / IATA Marine pollutant



Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:

No information available.

General information: DOT Regulated Marine Pollutant. IMDG Regulated Marine Pollutant.

15. Regulatory information

US federal regulations All components are on the U.S. EPA TSCA Inventory List. TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not on regulatory list.

CERCLA Hazardous Substance List (40 CFR 302.4)

Ethyl Benzene (CAS 100-41-4) LISTED

Xylenes (CAS 1330-20-7) LISTED

Other federal regulations:

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Ethyl Benzene (CAS 100-41-4)

Xylenes (CAS 1330-20-7)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated

Clean Water Act (CWA) Section 112(r) (40 CFR 68.130)

Hazardous substance

Safe Drinking Water Act (SDWA)

10 mg/l

10 mg/l

Drug Enforcement Administration (DEA). List 2, Essential Chemicals (21 CFR 1310.02(b) and 1310.04(f)(2) and Chemical Code Number

Not listed.

Drug Enforcement Administration (DEA). List 1 & 2 Exempt Chemical Mixtures (21 CFR 1310.12(c))

Not regulated

DEA Exempt Chemical Mixtures Code Number

Not regulated.

Food and Drug Administration (FDA)

Not regulated

US state regulations: WARNING: This product contains a chemical known to the State of California to cause cancer.

US. Massachusetts RTK - Substance List

Ethyl Benzene (CAS 100-41-4)

Xylenes (CAS 1330-20-7)

US. New Jersey Worker and Community Right-to-Know Act

Ethyl Benzene (CAS 100-41-4) - 500 lbs

Xylenes (CAS 1330-20-7) - 500 lbs

US. Pennsylvania RTK - Hazardous Substances

Ethyl Benzene (CAS 100-41-4)

Xylenes (CAS 1330-20-7)

US. Rhode Island RTK

Ethyl Benzene (CAS 100-41-4)

Xylenes (CAS 1330-20-7)

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT):

Listed substance – Ethyl Benzene (CAS 100-41-4)

International Inventories:

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances	Yes
(PICCS)		
United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory		Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s)

16. Other information

Disclaimer - The information in the sheet was written based on the best knowledge and experience currently available. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and

release and is not to be considered 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 materials or in any process, unless specified in the text.

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