Revision date: 07/23/2018 *Version:* 3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:	Xylene CAS# 1330-20-7; 100-41-4
Product No.:	89370-088
Other means of identification:	Dimethylbenzene; xylol, methyltoluene; Xylene mixture of isomers

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: This product is recommended for laboratory and manufacturing use only.
It is not recommended for drug, food or household use.

1.3. Details of the supplier of the safety data sheet

Company VWR International, LLC
Radnor Corporate Center
100 Matsonford Road
Radnor, PA 19087-8660
Telephone 610.386.1700

1.4. Emergency Telephone number

CHEMTREC 800.424.9300
CANUTEC 613.996.6666

SECTION 2: Hazards identification

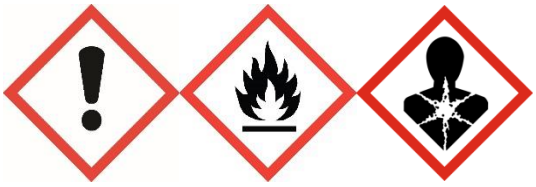
2.1. Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Hazard classes and hazard categories	Hazard statements
Dermal (Category 4) Acute toxicity	Harmful by skin absorption
Inhalation (Category 4) Acute toxicity	May be fatal if swallowed and enters airways.
Aspiration hazard (Category 1)	May cause respiratory irritation
Aquatic toxicity (Category 3) Chronic	Harmful to aquatic life with long lasting effects
Eye Irritation (Category 2A)	Irritant
Flammable liquids (Category 3)	Flammable liquid
Skin Irritation (Category 2)	Harmful in contact with skin
Specific target organ toxicity single exposure (Category 3)	Central nervous system, Eyes, Respiratory system, Skin

2.2. GHS Label elements, including precautionary statements

Pictograms



Signal word DANGER!

Hazard statements	
H226	Flammable liquid and vapor
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin
H315	Causes skin irritation
H319	Causes serious eye irritation
H332	Harmful if inhaled
H335	May cause respiratory irritation
H412	Harmful to aquatic life with long lasting effects

Precautionary statements	
P261	Avoid breathing dust/fumes/gas/mist/vapors.
P501	Dispose of contents and container to an approved waste disposal plant.
P331	Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or a doctor /physician.
P210	Keep away from heat, sparks, open flames, and hot surfaces. No smoking.
P280	Wear protective gloves and eye and face protection.

2.3. WHIMS Classification:

B2 - Flammable and combustible material - Flammable liquid
D2A - Poisonous and infectious material - Other effects - Very toxic
D2B - Poisonous and infectious material - Other effects - Toxic

2.4. Hazards not otherwise classified (HNOC) or not covered by GHS or WHIMS

SECTION 3: Composition / information on ingredients

3.1. Hazard components

Chemical name	CAS#	Weight%
Ethyl benzene	100-41-4	5-20
Xylenes	1330-20-7	80-95

SECTION 4: First aid measures

4.1. General information:
Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

In case of inhalation:
If inhaled, remove to fresh air. If breathing is difficult, give supplemental oxygen. If not breathing, begin artificial respiration. Get medical aid.

In case of skin contact:
Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid if irritation persists. Wash clothing before reuse. Thoroughly clean shoes before reuse.

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

In case of ingestion:
Aspiration hazard if swallowed. Get medical attention immediately. DO NOT induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

4.2. Most important symptoms and effects, both acute and delayed

4.3. Indication of any immediate medical attention and special treatment needed
Note to physician: Treat symptomatically and supportively.

SECTION 5: Firefighting measures

5.1. Extinguishing media
Water streams may be ineffective and spread the fire. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

5.2. Special hazards arising from the substance or mixture:
No data available

5.3. Special protective equipment for firefighters:
As in any fire, always wear self-contained breathing apparatus in pressure-demand (MSA/NIOSH approved or equivalent), and full protective gear.

5.4. Hazardous combustion products:
Carbon monoxide and carbon dioxide.

5.5. Advice for firefighters:
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.

5.6. Additional information

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:
Wear respiratory protection. Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

6.2. Environmental precautions:
Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.

6.3. Methods and material for containment and cleaning up:
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 ion 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.

6.4. Additional information

SECTION 7: Handling and storage

7.1. Precautions for safe handling:

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 all 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.

7.2. Conditions for safe storage, including any incompatibilities

Keep away from heat, sparks, and flame in a flammables area. Keep container closed when not in use. Keep from contact with oxidizing materials and strong acids. Store in a cool, dry, well-ventilated space and avoid contact with incompatible materials.

7.3. Specific end use(s)

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Chemical Name	Limit value type & Country of Origin	Exposure Limit value	Note
Ethylbenzene	TWA US (NIOSH)	100 ppm/435 mg/m^3	NIOSH Recommended Exposure Limit
Ethylbenzene	TWA US (ACGIH)	100 ppm	ACGIH Threshold Limit value
Ethylbenzene	TWA US (OSHA)	100 ppm/435 mg/m^3	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants.
Xylene	TWA US (OSHA)	100 ppm / 435 mg/m^3	29 CFR 1910.1000 Table Z-1 Limits for Air Contaminants.
Xylene	TWA US (ACGIH)	100 ppm / 34 mg/m^3	ACGIH Threshold Limit value

8.2. Exposure controls

Appropriate 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 equipment

Eye/face protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU) Maintain eye wash fountain and quick-drench facilities in work area.

Skin protection:

Wear impervious, flame retardant, antistatic protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. 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.

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)

Hygiene measures:

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

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

a) Appearance:
Physical state: Liquid
Color: colorless
b) Odor: Aromatic
c) Odor Threshold: 1 ppm
d) pH: Not available
e) Freezing point: -25°C
f) Initial boiling point and boiling range: 137-140°C (279-284°F)

g) Flash point: 24°C
h) Evaporation rate: (Butyl acetate = 1): 0.7
i) Flammability (solid, gas) Flammable
j) Upper/lower flammability
or explosive limits: Lower limit – 1.1 vol %, Upper limit – 7.0 vol %
k) Vapor pressure: 8.29 mm Hg at 25°C (77°F)
l) Vapor density: 3.67
m) Relative density: 0.865 g/cm^3
n) Solubilities: Insoluble
o) Partition coefficient (n-Octanol/Water): Not available
p) Auto-ignition temperature: 527°C (982°F)
q) Decomposition temperature: Not available

9.2. Other information:

Molecular Formula: $C_6H_4(CH_3)_2$

Molecular Weight (Xylene mixture) 106.17 g/mol

SECTION 10: Stability and reactivity

10.1. Reactivity

10.2. Chemical stability: Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions: Hazardous polymerizations:

10.4. Conditions to avoid: Ignition sources and excess heat.

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

10.6. Hazardous decomposition products: Carbon monoxide and carbon dioxide

SECTION 11: Toxicology

11.1. Information on toxicological effects

Acute toxicity - Ethylbenzene

Oral LD_{50}

Rat: LD50=3500 mg/kg

Inhalation LC_{50}

Rat: LC50=55,000 mg/m^3 2H

Dermal LD_{50}

Rabbit: 17,800 uL/kg

Acute toxicity - Xylenes

Oral LD_{50}

Rat: LD50=4300 mg/kg

Mouse: LD50=2119 mg/kg

Inhalation LC_{50}

Rat: LC50=5000 ppm /4H

Dermal LD_{50}

Rabbit: >1700 mg/kg

Other information on acute toxicity

Irritation:

Routes of Entry: Inhalation, skin absorption, skin contact

Skin corrosion/irritation

May be harmful if absorbed through the skin. Causes skin irritation, defatting, cracking, and dryness. Blistering may occur, particularly if exposure is concentrated and the exposed area is covered. Liquid and vapor and be absorbed through the skin, but not as easily as inhalation or ingestion. Absorption is reported to be slow and significant health

effects are not expected by this route of exposure.

Serious eye damage/eye irritation

Contact with eyes generally causes transient, superficial injury. Based on animal studies with mixed Xylene isomers, it is probably a mild irritant.

Respiratory

High concentrations may cause central nervous systems effects characterized by nausea, headache, dizziness, unconsciousness, and coma. Prolonged exposures may result in dizziness and general weakness. Irritation may lead to pneumonitis and pulmonary edema. May cause liver and kidney damage. Causes irritation of the mucous membranes. Odor is not an adequate warning of exposure to xylene. Industrial fatalities due to severe overexposure have been described

Germ cell mutagenicity

Carcinogenicity:

IARC: Group 3: not classifiable as to its carcinogenicity to humans (Xylene); Possibly carcinogenic to humans (Ethylbenzene)
ACGIH: Carcinogenicity (Xylenes): ACGIH: A4, not classifiable as a human carcinogen IARC: Group 3 – not classifiable. Carcinogenicity (Ethylbenzene): ACGIH: A3, confirmed animal carcinogen with unknown relevance to humans. California: carcinogen, initial date 6/11/04 NTP: Not listed IARC: Group 2B carcinogen.
NTP: No data is available.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen by OSHA.

Reproductive toxicity

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**.**

Specific target organ toxicity-repeated exposure

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.

Aspiration hazard

Aspiration hazard. May cause irritation of the digestive tract. May cause central nervous system depression characterized by excitement followed by nausea, headache, dizziness, and unconsciousness. Advanced stages may cause collapse, loss of consciousness, coma,

and death from respiratory failure. May cause effects similar to acute inhalation.

Additional information
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. Neurotoxicity: Xylene may damage hearing or enhance sensitivity to noise in chronic occupational exposures, probably from a neurotoxic mechanism.

SECTION 12: Ecological information

12.1. 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 = 16.1mg/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

12.2. Persistence and degradability
No data available

12.3. Bioaccumulative potential
No data available

12.4. Mobility in soil
In soil, it will volatilize and leach into groundwater. Little bioconcentration is expected.

12.5. Other adverse effects
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 25° C, will exist solely as a vapor in the ambient 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.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

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 acetonitrile 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.

SECTION 14: Transport information

Land Transport DOT (U.S.)

UN Number: UN1307
Proper Shipping name: Xylenes
Transport Hazard Classes
Class: 3
Packing Group: III
Environmental hazard(s)
Reportable Quantity: 454 kg

Sea Transport IMDG

UN Number: 1307
Proper Shipping name: Xylenes
Transport Hazard Classes
Class: 3
EMS- No.F-E, S-D
Packing Group: III
Environmental hazard(s) marine pollutant: No
Segregation Group
Special precautions for user

Air Transport IATA

UN Number: UN1307
Proper Shipping name Xylenes
Transport Hazard Classes
Class: 3
Packing Group: III
Environmental hazard(s)
Special precautions for user

SECTION 15: Regulatory information

OSHA Hazards
Flammable liquid, Harmful by skin absorption, Irritant

SARA 302 Extremely Hazardous Substances :
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302. Does not have a TPQ.

SARA 313 (TRI reporting)
Xylenes (CAS# 1330-20-7) and ethylbenzene (CAS# 100-41-4) are reportable under Section 313 and 40 CFR 373.

SARA 311/312 Hazardous Chemicals:
Acute Health Hazard
Chronic health Hazard
Fire Hazard

Massachusetts Right-To-Know Substance List:
Ethylbenzene CAS-No. 100-41-4 Revision date 2007-07-01; Xylene CAS-No. 1330-20-7 Revision date 1989-08-11

Pennsylvania Right-To-Know Hazardous substances:
Ethylbenzene CAS-No. 100-41-4 Revision date 2007-07-01; Xylene CAS-No. 1330-20-7 Revision date 1989-08-11

New Jersey Worker and Community Right-To-Know Components:
Ethylbenzene CAS-No. 100-41-4 Revision date 2007-07-01; Xylene CAS-No. 1330-20-7 Revision date 1989-08-11

California Proposition 65:

WARNING: This product can expose you to chemicals including Ethylbenzene which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Inventory status:

Canada DSL/NDSL Inventory List**:** Components of this product are listed either on the Domestic Substance List (DSL) or the Non-Domestic Substance List (NDSL).
US TSCA Inventory List: Listed
EINECS, ELINCS or NLP: Listed

SECTION 16: Other information

NFPA Rating:
Health: 2
Flammability: 3
Reactivity: 0
Special Hazard:

DISCLAIMER

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. VWR International and its Affiliates shall not be held liable for any damage resulting from handling.