The Elliot
A Member of SOLUTIONHEALTH

WHAT YOU NEED TO KNOW ABOUT XYLENE

What is Xylene?

Xylene is a colorless liquid that has a sweet odor. Xylene is flammable and practically insoluble. Xylene is primarily a synthetic chemical; however, it can occur naturally in petroleum, coal tar, and during forest fires.

There are three forms of xylene: meta-xylene, ortho-xylene and para-xylene. These different forms are known as isomers. Collectively, these three isomers of xylene are known as total xylenes. Total xylenes are used routinely in the histology laboratory; therefore, annual hazardous training is required by OSHA.

In the histology laboratory Xylene is used to remove remaining water from permanent slides prior to cover slipping. Additionally, Xylene is used as an activator for the cover slipping film used in the histology department.

What Are the Health Effects of Xylene?

Both the International Agency for Research on Cancer (IARC), a division of the World Health Organization (WHO) and the U.S. Environmental Protection Agency (EPA) have determined that there is insufficient information to determine the possible carcinogenic effects of xylene.

The nervous system, respiratory system, cardiovascular system, and kidneys are primarily affected by exposure to xylene. Effects can include:

- Labored Breathing
- Impaired Pulmonary Function
- Increased Heart Palpitation
- Severe Chest Pain
- Accumulation of Fluid in Lungs
- Respiratory Depression or Arrest
- Ventricular Arrhythmias

Symptoms of Xylene exposure include:

- Eye Irritation
- Headaches
- Dizziness
- Fatigue
- Tremors
- Incoordination
- Nausea
- Vomiting
- Stomach Discomfort
- Impaired Short-term Memory
- Impaired Reaction Time
- Alterations in Equilibrium
- Anxiety
- Inability to Concentrate
- Lack of Muscle Coordination

- Death
- Coma
- Impaired Vision
- Paralysis
- Skin Irritation

What Happens to Xylene in the Environment?

Because xylene is a liquid, it can easily leak into soil, surface water or groundwater. Xylene can enter soil, water, or air in large amounts after spills or as a result of a leak during storage or burial at a waste site. Xylene evaporates quickly, meaning that most xylene that gets into soil or water is released into the air and broken down by sunlight and less harmful chemicals within a couple of days. However, if xylene leaks into underground water, it may remain for several months before being broken down. Therefore, it is imperative hospital policy concerning the disposal of Xylene is followed.

Elliot Hospital Laboratory and Hospital policy states only those who have been properly trained in the disposal of hazardous waste such as Xylene can do so. However, anyone within the hospital system is expected to adhere to the policy of never dumping a hazardous chemicals down any drain within the buildings at both at the main Elliot Health System campus and River's Edge campus.

OSHA Exposure Limits

The OSHA limit for Xylene exposure is 100 ppm averaged over an 8-hour period. Elliot Hospital Laboratory employees who have job functions related to Xylene undergo a Xylene monitoring program upon hire. Once cleared, employees are not required to undergo the program again unless there is a job function change which includes Xylene.

How Can I Reduce My Risk of Exposure to Xylene @ Elliot Hospital Laboratory?

1. Wear proper PPE. Proper PPE must include gloves and a lab coat. However, additional equipment such as goggles is recommended.
2. Store Xylene properly. In accordance with hospital and laboratory policy, Xylene should be stored according to manufacturer's instructions within a flammable cabinet.
3. Secondary containers used in areas such as the histology grossing area and frozen section room should be labeled with the appropriate OSHA Hazard Communication Safety Pictogram/label.

Xylene Can Also be Labeled As:

Benzene; p-Dimethylbenzene; p-Xylol; 1,4-Dimethylbenzene; 1,4-Xylene; pMethyltoluene; para-Xylene; Chromar; Scintillar; 4-Methyltoluene; NSC 72419; 1,4- dimethyl-benzene (p-xylene); o-Dimethylbenzene; o-Methyltoluene; o-Xylol; 1,2- Dimethylbenzene; 1,2-Xylene; 3,4-Xylene; ortho-Xylene; NSC 60920; 2-Methyltoluene; 1,2-dimethyl-benzene (o-xylene); m-Xylene; m-Dimethylbenzene; m-Xylol; 1,3- Dimethylbenzene; 1,3-Xylene; 2,4-Xylene; m-Methyltoluene; meta-Xylene; NSC 61769; 1,3-dimethylbenzene (m-xylene).

Links:

https://www.epa.gov/sites/production/files/2016-09/documents/xylenes.pdf
https://www.atsdr.cdc.gov/PHS/PHS.asp?id=293&tid=53
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