Just the Facts About ...

Air Toxics

From the Ambient Air Quality Series

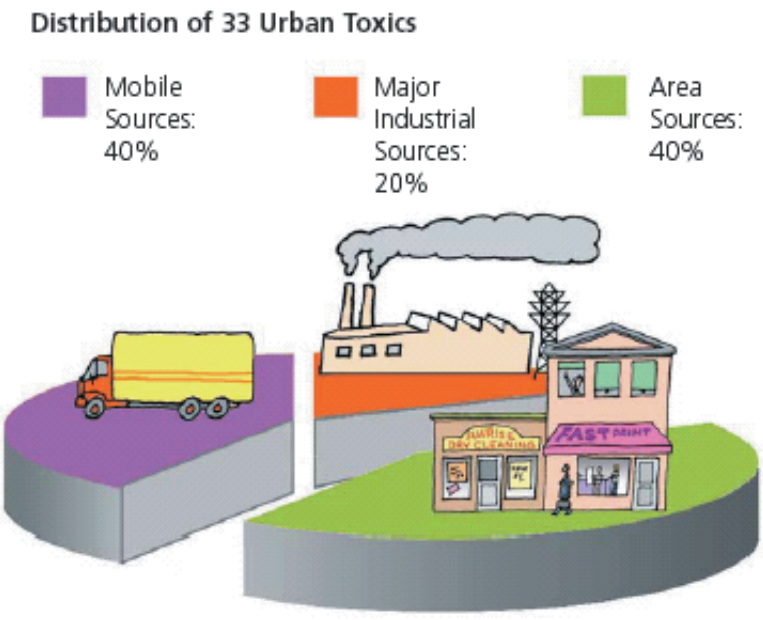
Toxic Pollutants

Millions of people live in areas where toxic air pollutants can potentially pose serious health concerns. Toxic air pollutants, also known as hazardous air pollutants, are those pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects. Title III of the Clean Air Act deals with air toxics. Under the 1990 Amendments to the Clean Air Act, EPA is required to regulate sources emitting major amounts of 189 (now 188) toxic air pollutants.

Where Do They Come From?

Toxic pollutants are emitted from various sources, including major stationary, area, as well as mobile sources. Examples of toxic air pollutants include benzene, which is found in gasoline; tetrachloroethene (or perchlorethlyene), which is emitted from some dry cleaning facilities; and methylene chloride, which is used as a solvent and paint stripper by a number of industries. Examples of other listed air toxics include dioxin, asbestos, toluene, and metals such as cadmium, mercury, chromium, and lead compounds. Most air toxics originate from human-made sources, however, some air toxics are also released from natural sources such as volcanic eruptions and forest fires.

Mobile sources can include cars, trucks, buses, and non-road vehicles like ships or construction equipment.
Major (large commercial and industrial) sources can include chemical plants, oil refineries and steel mills.
Area (small commercial and industrial) sources can include dry cleaners, gas stations, and landfills.



Source: EPA, Air Toxics Emissions, EPA's Strategy for Reducing Health Risks in Urban Areas

Many smaller, or area sources such as drycleaners, when combined can emit as much air toxics as a large, or major source such as a power plant. Individual mobile vehicles when combined also emit a substantial quantity of air toxics.

Major Sources

Major sources are defined as sources that emit 10 tons per year of any of the listed toxic air pollutants, or 25 tons per year of a mixture of air toxics. These sources may release air toxics from equipment leaks, when materials are transferred from one location to another, or during discharge through emission stacks or vents. Area sources consist of smaller-size facilities that release lesser quantities of toxic pollutants into the air.

Area Sources

Area sources are defined as sources that emit less than 10 tons per year of a single air toxic, or less than 25 tons per year of a combination of air toxics. Though emissions from individual area sources are often relatively small, collectively their emissions can be of concern - particularly where large numbers of sources are located in heavily populated areas.

Urban Concerns

Air toxics emissions occur throughout the United States, but the highest concentrations of sources occur primarily in urban areas. Toxic air pollutants are of special concern in urban areas because large concentrations of people live and work near a variety of pollution sources. In urban areas, air toxics may threaten the health of some people more than others, depending on factors such as where they live in relation to toxic sources. EPA has identified 33 of the 188 toxic air pollutants posing the greatest threat to public in urban areas. Although 33 air toxics are estimated to represent approximately 20 percent of national air toxics emissions, they are believed to be the most important air toxics contributing to potential health risks in urban areas.

Information Available

Individuals can now access information regarding the levels of air toxics in their area. The National Air Toxics Assessment (NATA) was designed to help the government and the public better understand the air toxics problem. This assessment looks at 33 air toxics that present the greatest threat to public health in the largest number of urban areas. It includes: 1) an inventory of emissions; 2) estimates of outdoor air toxics levels; 3) estimates of exposure; and 4) a characterization of public health risks. Additionally, the EPA has another database called the Toxics Release Inventory -- This database includes information for the public about releases of toxic chemicals from manufacturing facilities into the environment through the air, water, and land. You can access the data by typing in your zip code.

Health Concerns

People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory and other health problems. In addition to exposure from breathing air toxics, some toxic air pollutants such as mercury can deposit onto soils or surface waters, where they are taken up by plants and ingested by animals and are eventually magnified up through the food chain. Like humans, animals may experience health problems if exposed to sufficient quantities of air toxics over time. Once toxic air pollutants enter the body, some persistent toxic air pollutants accumulate in body tissues. Predators typically accumulate even greater pollutant concentrations than their contaminated prey. As a result, people and other animals at the top of the food chain who eat contaminated fish or meat are exposed to concentrations that are much higher than the concentrations in the water, air, or soil.

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