

2014 National Air Toxics Assessment: Fact Sheet

Overview

- On August 22, 2018, the U.S. Environmental Protection Agency (EPA) released the sixth National Air Toxics Assessment (NATA), the Agency’s tool that provides information on potential health risks from breathing air toxics, also known as hazardous air pollutants.
- NATA is a screening tool, intended to help EPA and state, local and tribal air agencies determine if areas, pollutants or types of pollution sources need to be examined further to better understand risks to public health.
- NATA provides broad estimates of the risk of developing cancer and other serious health effects over census tracts across the country. It does not estimate any person’s individual risk. (See “Using NATA,” on page 2 of this fact sheet.)
- The version of NATA released today is based on emissions for the calendar year 2014. It includes estimates of exposure and risk for 180 air toxics that EPA regulates under the Clean Air Act. It also estimates exposure and risks for diesel particulate matter (noncancer effects only).
- Nationwide, total emissions of air toxics are declining, and air quality monitoring data show that concentrations of many toxics in the air, such as benzene, also are trending downward.
- The 2014 NATA estimates that the nationwide average cancer risk from air toxics exposure is 30 in 1 million. About half of that risk comes from the formation of formaldehyde –produced when other pollutants chemically react in the air. This is known as secondary formation, and comes from emissions from industries, mobile sources, and natural sources. The other half of the nationwide cancer risk comes from pollution that is directly emitted to the air.
- Despite improvements, some local areas still face challenges. The 2014 NATA results also indicate that some census tracts may have elevated risks of cancer from air toxics exposure (less than 1 percent of all tracts). Census tracts are small subdivisions of a county or county equivalent, such as a parish. Industrial emissions of three pollutants – ethylene oxide, chloroprene and coke oven emissions – contribute to most of the risk in these tracts. *See box above for more information on ethylene oxide.*
- When NATA shows a potential cancer risk of greater than 100 in 1 million at a census tract, it means there may be an elevated cancer risk in that tract. A risk level of 100 in 1 million refers to

EPA Taking Steps to Address Emissions of Ethylene Oxide

The 2014 NATA shows that several areas could have elevated cancer risks from long-term exposure to the chemical ethylene oxide. These elevated risks are largely driven by an EPA risk value that was updated in late 2016.

Based on the NATA result, EPA is using its tools under the Clean Air Act to address emissions of ethylene oxide from certain types of industries.

the likelihood that 100 in 1 million (1 in 10,000) people would develop cancer if they breathe air containing the same amount of the same air toxic for 70 years. This risk would be in addition to the cancer risk a person would have without being exposed to the air toxic.

- In developing air toxics regulations, EPA uses the 100-in-1 million risk level to help the Agency determine whether facilities need to reduce emissions.
- NATA estimates long-term risks – – those that may occur from breathing air containing elevated levels of air toxics continuously for many decades. It does not estimate short-term (acute) or intermediate risks. However, based on an examination of available data, EPA does not expect ethylene oxide levels in the air in these areas to be high enough to cause immediate harm to health.

Using NATA

- EPA and state, local and tribal air agencies use NATA to see if areas, specific air toxics, or types of pollution sources need to be examined further to better understand risks to public health. NATA does not estimate any person's individual risk. See the lists below for do's and don'ts of NATA use:
- **DO** use NATA results to:
 - identify pollutants and types of pollution sources of greatest concern,
 - improve understanding of air toxics-related health risks,
 - support communities in designing their own local assessments,
 - help inform community and local air toxics programs,
 - help set priorities for the collection of additional information, and
 - set priorities for improving emission inventories,
- **DON'T** use NATA results:
 - as a definitive means to pinpoint specific risk values within a census tract,
 - to compare risks at local levels (such as between neighborhoods) or between states, or
 - as the sole basis for developing risk reduction plans or regulations, to control specific sources or pollutants or to quantify benefits of reduced air toxic emissions,
 - *Here's why:* NATA is a screening assessment. Its uncertainties vary by location and by pollutant and by type of pollution source. In many cases, more detailed

assessments, including emissions testing and more refined modeling, may be needed to better understand local risks.

- **DON'T** use NATA results:
 - to examine trends from one NATA year to another.
 - *Here's why:* scientific information on air toxics and health can change between assessments. Computer modeling tools and inputs to modeling can change, too, making comparison across NATA versions inaccurate.
 - The 2014 NATA includes several improvements that were not available for the previous version (2011). Those include data that allow the Agency to better estimate where emissions are occurring within a county, improved modeling accuracy for some pollutants, and updated information about the health effects some pollutants cause.

DEVELOPING NATA

- EPA collaborates extensively with, state, local and tribal air agencies to develop and quality assure the data used in NATA.
- The 2014 NATA is based on emissions for the 2014 calendar year – the most complete and up-to-date U.S. emissions data available at the time of the assessment. It also uses the latest available scientific information on air toxics and health.
- NATA uses emissions information and estimated secondary and background air toxics concentrations to estimate potential health risks.
- For the 2014 NATA, EPA assessed 180 air toxics regulated under the Clean Air Act, from the following types of emissions sources:
 - **Point sources** – These are typically industrial facilities such as coke ovens for the steel industry, large waste incinerators and refineries, but also include some smaller sources such as dry cleaners.
 - **Nonpoint sources** – examples include small manufacturers and gas stations.
 - **Mobile sources** – including cars, trucks and off-road vehicles like construction equipment and trains.
 - **Fires** – including wildfires, prescribed wildland fires and agricultural burning,
 - **Biogenics** – naturally occurring emissions from trees, plants and soil microbes.

- In addition, NATA includes estimated pollution from:
 - **Secondary formation** – This refers to pollutants that form in the air through chemical reactions; secondary air toxics often form via reactions between human-emitted and naturally occurring compounds.
 - **Background concentrations** – representing emissions from distant sources, emissions from prior years that persist in the environment, and natural source emissions other than those modeled as biogenics.
- EPA used all of these data to conduct computer modeling to create a snapshot of toxics in the air across the country in 2014.
- The Agency used that snapshot, combined with information about population and information about how different air toxics affect health, to estimate cancer risks and noncancer health effects for about 180 air toxics plus diesel particulate matter (noncancer only).

For more information

- For more information on NATA, visit <https://www.epa.gov/national-air-toxics-assessment>.
- For information on EPA's efforts to address emissions of ethylene oxide, visit <https://www.epa.gov/ethylene-oxide>.