

US EPA ARCHIVE DOCUMENT

EPA Schools Monitoring Initiative

October 1, 2009 Monitoring Update: Acrolein

Summary:

The purpose of this document is to share information about *acrolein* that we have learned from recent air quality monitoring outside schools. EPA is monitoring for acrolein at 40 schools in 16 states. Acrolein is a widespread pollutant that can irritate your eyes, nose and throat. Children and adults with asthma and allergies may be more sensitive. Acrolein comes from fires, industries, and things we use every day, such as cars and trucks. It also can form from other chemicals in the air. EPA, states and local air quality agencies are concerned about acrolein and are working to reduce this pollutant across the country.

April 1, 2010 -- Note: Results of a recent short-term laboratory study have raised questions about the consistency and reliability of monitoring results for acrolein. As a result, EPA will not analyze acrolein data as part of the School Air Toxics Monitoring Project. EPA is working with its state and local partners to make improvements to acrolein monitoring and analysis methods as part of our continuing effort to accurately measure levels of this pollutant in the air.

What we are finding:

- The levels of acrolein we are seeing outside the schools so far are generally similar to what air quality monitors at other locations have measured in recent years. But these levels are higher than we'd like.
- Acrolein levels can vary from day to day and from place to place. On some days, it may irritate your eyes, nose and throat, or aggravate your asthma. This is more likely to happen if you are sensitive to acrolein.
- Monitoring at the schools is not complete. We will share more information as the monitoring continues.

How acrolein can affect your health:

- Acrolein can irritate your nose, eyes and throat. These parts of the body are the most sensitive to acrolein.
- Scientific studies don't tell us exactly what levels of acrolein will cause health concerns for any particular person.
- People with asthma or allergies may be more sensitive. This includes young children, who have higher rates of asthma than adults. They also have more severe asthma episodes.
- It can be difficult to determine exactly which pollutant is affecting you, because acrolein often occurs in the air with other pollutants that cause similar effects. This includes ozone, a key component of smog.
- Acrolein has not been identified as a carcinogen.

Where acrolein comes from:

- Acrolein primarily enters the air when things burn. There are many sources of acrolein, including fires, exhaust from cars, trucks, boats and planes, wood heating, and industrial boilers. Acrolein also is found in cigarette smoke and smoke from cooking animal fats.
- Acrolein also can form in the air when other chemicals break down. It often is found in smog.
- In addition, acrolein can enter the air from pesticide use and from facilities that use acrolein in industrial processes. Note: as a pesticide, acrolein is subject to strict use limitations and can only be applied by trained and certified applicators.
- Acrolein levels may be higher in areas near fires. If you've ever felt your eyes burn when you were near a smoky fire, high levels of acrolein were most likely the cause.

What we're doing about acrolein:

- EPA has been working to reduce acrolein in the air since 1990. We're doing that through regulations to reduce smog, and to limit air toxic emissions from industries and mobile sources.
- Some rules already have reduced acrolein emissions; others will do so in the coming years.
 - These include the mobile source air toxics rule and the heavy duty highway diesel vehicle rule, both of which reduce acrolein by reducing a class of chemicals known as hydrocarbons. The exhaust emission standards in the mobile source air toxics rule will phase in between 2010 and 2015. The heavy duty vehicle standards will be fully phased in 2010. Benefits of these standards will continue to accrue as older vehicles are replaced with vehicles meeting the newer standards.
- We're also reducing acrolein through voluntary programs such as diesel retrofits, anti-idling programs and woodstove changeouts.
- Many state and local air agencies also are reducing acrolein through a number of their own programs, including programs to reduce emissions from wood heating, agricultural burning, diesel engines (including school buses) and airports.
- We're going to keep monitoring the air for acrolein at a number of locations across the country. We'll use the information to track our progress.

What you can do:

- Don't idle your car, and help reduce bus idling at your school. For more information, visit:
 - www.epa.gov/cleanschoolbus/antiidling.htm
- Make sure your children or students with asthma closely follow their asthma action plans. Children with asthma may be more likely to experience irritation and asthma attacks from acrolein than other children.
 - More information on asthma and asthma action plans is available at www.epa.gov/asthma.
 - Additional information on asthma is available at www.noattacks.org
- Keep children away from cigarette smoke. Smoking puts more acrolein into the air.
 - For more information on secondhand smoke and the health of your family, visit www.epa.gov/smokefree/.

Questions & Answers

Should I change my child's school because of acrolein?

- No. While we have not completed monitoring at most schools, recent monitoring data indicate that acrolein is likely elevated in most areas of the country, not just at schools.

Should I keep my child indoors because of acrolein?

- No. Acrolein levels indoors can be similar to those outdoors.
- EPA is studying whether acrolein levels are higher at certain times of day, the way ground-level ozone is. This will help us provide additional advice in the future on whether certain times of day are better for exercising or playing outdoors.

I have questions about asthma. Where can I get help?

- Several nonprofit organizations can help you locate asthma care services in your community.
 - Allergy and Asthma Network Mothers of Asthmatics (1-800-878-4403; on the Web: www.aanma.org)
 - American Lung Association (1-800-LUNG USA or 1-800 586-4872; on the Web: www.lungusa.org)
 - Asthma and Allergy Foundation of America (1-800-7 ASTHMA or 1-800-727-8462; on the web: www.aafa.org)

Where can I find out more about the monitoring at my school?

- Please visit www.epa.gov/schoolair.