REV biodiesel™
the revolution of fuel

School Bus Health Concerns and How **YOU** Can Make a Difference

LEARN THE FACTS!

YOUR CHILD'S EXPOSURE TO DIESEL FUEL FUMES FROM SCHOOL BUSES COULD BE DANGEROUS!

Every year, we trust our children to be safe on our school buses. In fact, approximately 450,000 school buses safely transport more than 24 million students each day, travelling more than 4 billion miles each year.

But research into the effects of diesel exhaust fumes show that exposure can cause or increase the severity of respiratory illness for our children. Even more alarming, Federal agencies have classified diesel exhaust as a probable human carcinogen because benzene, an important component of the fuel and exhaust, is designated to be a known human carcinogen.

Here are a few more facts about diesel fuel and school buses:

- If rides average 30 minutes in each direction, students will spend 180 hours on buses each year.
- There is no known safe level of exposure to diesel exhaust for children, especially those with respiratory illness.
- Diesel exhaust can adversely affect children with underlying respiratory illnesses such as asthma, bronchitis, and infections.
- Components of diesel exhaust are genotoxic, mutagenic, and can produce symptoms of allergy, including inflammation and irritation of airways.

DID YOU KNOW?

- Biodiesel fuel is nontoxic and biodegradable.
- Biodiesel fuel can be used in any diesel engine with few or no modifications.
- An analysis by researchers at the University of California, Berkeley found that children on school buses collectively inhale as much or more exhaust emitted from those buses as does the rest of the city's population. The results highlight the problem of "selfpollution," or exhaust from the vehicle leaking into the cabin, particularly among older buses.
- Biodiesel's benefits include a reduction in particulate matter, carbon monoxide and unburned hydrocarbons, which contribute to the formation of smog. Biodiesel emissions also reduce potential cancer causing compounds by 80 to 90%.
- Numerous school districts across the country have realized the health and environmental benefits of biodiesel blends and made the switch. Because they work in any diesel engine with few or no modifications, biodiesel blends offer schools a relatively inexpensive option for an immediate solution to air quality concerns.
- The **Medford, New Jersey School District** is the pioneer in school bus use of biodiesel blends. Medford began using B20 (a blend of 80 percent petroleum diesel and 20 percent biodiesel) in 1997.
- Chicago, Illinois area school children have ridden biodiesel-powered school buses since 2005. **The Cook-Illinois Corporation**, which operates over 2,000 school buses in communities throughout the Chicago-land area, sees biodiesel as a "win, win situation."
- **Arlington County, Virginia**, located in suburban Washington, D.C., is another long-time user of B20. The county's 500 diesel-powered vehicles, including 130 school buses, run on the biodiesel blend. In addition, The Potomac School, a private K-12 school in McLean, VA, uses a biodiesel blend in its 39 diesel-powered buses and in its bobcat and other diesel maintenance equipment.
- The **Deer Valley School District in Phoenix** began using biodiesel in 1999 following a state mandate that school districts use alternative fuel vehicles to curb air pollution. In a total fleet of 250 vehicles, 140 school buses and 5 maintenance trucks run on biodiesel. A blind pilot study in Deer Valley revealed that school bus drivers noticed performance increases with biodiesel. They were baffled, however, by what they perceived as the smell of hot dogs throughout the day—apparently from biodiesel made from used cooking grease!

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GET INVOLVED!

SCHOOLS AND CITIES LISTEN TO PARENTS AND TAXPAYERS!

Our children are our future - we can make a difference. Bringing clean alternative energy to our school buses and public transportation is our responsibility. Learn more about how biodiesel can become the clean, affordable alternative fuel for our school buses and other public transportation.

Contact our state and federal representatives and tell them "We want clean biofuels for our children and our cities!"

- Find your Arizona state district representatives at **http://www.azleg.gov/MemberRoster.asp**.
- Contact the Governor at Gov. Jan Brewer (R) (**http://azgovernor.gov**) Phone **(602) 542-4331** Fax **602-542-1381**.
- **Contact your congressmen:**
  - **Sen. Jon Kyl** (R) (kyl.senate.gov) Fax: 202-224-2207
  - **Sen. John McCain** (R) (mccain.senate.gov) Fax: 202-228-2862
  - **Rep. Paul Gosar** (R-1) (gosar.house.gov) Fax: 202-226-9739
  - **Rep. Trent Franks** (R-2) (franks.house.gov) Fax: 202-225-6328
  - **Rep. Benjamin Quayle** (R-3) (quale.house.gov) Fax: 202-225-3462
  - **Rep. Ed Pastor** (D-4) (pastor.house.gov) Fax: 202-225-1655
  - **Rep. David Schweikert** (R-5) (Schweikert.house.gov) Fax: 202-225-3263
  - **Rep. Jeff Flake** (R-6) (flake.house.gov) Fax: 202-226-4386
  - **Rep. Raul Grijalva** (D-7) (grijalva.house.gov) Fax: 202-225-1541
  - **Rep. Gabrielle Giffords** (D-8) (giffords.house.gov) Fax: 202-225-0378

LEARN MORE

If you would like to learn more about how biodiesel can help create a safer environment and help protect our children from the effects of diesel fuel use in school buses, please check out some of the following independent research.

- EPA's Health Assessment Document for Diesel Engine Exhaust: Health Effects Institute (HEI). (1995) Diesel exhaust: a critical analysis of emissions, exposure, and health effects. Cambridge, MA: Health Effects Institute.
- The Impact of Biodiesel on Pollutant Emissions and Public Health by Robert L. McCormick, PhD. at **http://www.biodiesel.org/resources/sustainability/pdfs/JournaltotalFinal%20proof%2012-13-07.pdf**
- U.S. EPA. (1999) Guidelines for Carcinogen Risk Assessment. Review Draft. NCEA-F-0644, July. Risk Assessment Forum, Washington, DC. **http://www.epa.gov/ncea/raf/**
- Current municipal biodiesel use reports from the EPA: **http://www.epa.gov/region9/waste/biodiesel/arizona.html**
  - Gila River Indian Community in Maricopa County, AZ
  - City of Scottsdale

Additional References:

- California Environmental Protection Agency-OEHHA (Cal EPA). (1998) Part B: Health risk assessment for diesel exhaust, Public and Scientific Review Draft. February 1998.
- Health Effects Institute (HEI). (1995) Diesel exhaust: a critical analysis of emissions, exposure, and health effects. Cambridge, MA: Health Effects Institute.
- HEI. (1999) Diesel emissions and lung cancer: epidemiology and quantitative risk assessment. A special report of the Institute's Diesel Epidemiology Expert Panel. Cambridge, MA: Health Effects Institute.
  International Agency for Research on Cancer (IARC). (1989) Diesel and gasoline engine exhausts and some nitroarenes. IARC monographs on the evaluation of carcinogenic risks to humans: v. 46. Lyon, France: World Health Organization; pp. 41-185.
- Ishinishi, N; Kuwabara, N; Takaki, Y; et al. (1988) Long-term inhalation experiments on diesel exhaust. In: Diesel exhaust and health risks. Results of the HERP studies. Ibaraki, Japan: Research Committee for HERP Studies; pp. 11-84.

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