

Questions and Answers
IARC Classification of Occupational Exposures during Road Paving
October 20, 2011

What did IARC do?

The International Agency for Research on Cancer (IARC), based in Lyon, France, issued a statement today assigning occupational exposures to straight-run asphalt cement and its emissions during road paving a Group 2B (“possibly carcinogenic to humans”) classification. This Group 2B classification puts road paving in the same category as numerous exposures, including cell phones and coffee.

The asphalt paving industry’s opening statement

The asphalt paving industry has always taken questions about workers’ health and safety seriously. We have had a series of organized initiatives to reduce paving workers’ exposure to emissions from asphalt (also known as asphalt fumes or bitumen fumes) going back over 20 years. Simultaneously with these initiatives, we have worked to fill the gaps in the science. All these initiatives have been in partnership with government agencies, academic institutions, and unions.

How do you respond to the IARC classification?

We respect IARC, its scientists, and its standing in the international community. However, Dr. Jim Melius, DrPH, MD, the top occupational physician at the Laborers International Union of North America (LIUNA), commented, “People working in the asphalt paving industry should not be concerned about this new IARC classification. The two key animal studies on paving asphalt did not show any evidence of cancer risk, and the major IARC cancer study of people working in the paving industry in Europe did not show any increased risk for cancer.”

How has the asphalt paving industry reduced workers’ exposure?

The asphalt industry has been working for more than 20 years in partnership with government agencies, academic institutions, and unions to reduce workers’ exposure to asphalt paving emissions. Some major initiatives include:

- Engineering controls on highway-class pavers (put in place in July 1997), which vent fumes away from the workers
- Warm-mix asphalt, which reduces or eliminates production of fumes at the source by lowering the temperatures of paving operations

Between 1970 and 2010, exposures at the paving site have been reduced by 93 to 98 percent.

Scientific studies

Three key areas of research on carcinogenicity indicators are human mortality, animal inhalation, and animal skin painting. Research in each area has been completed and the studies show no relation between asphalt paving fumes and cancer.

- Human mortality – IARC’s eight-country study (Nested Case Control, 2009) showed no link between exposure to asphalt paving fumes and cancer in paving workers.
- Animal inhalation – Fraunhofer Institute (Germany, 2005-2006) study found no link between asphalt paving fumes and cancer.
- Animal skin painting – A study in the U.S. sponsored by the Asphalt Institute (2009-2010) found no link between asphalt paving fumes and cancer.

Who is IARC?

IARC, the International Agency for Research on Cancer, brings together international panels of scientists. It is based in Lyon, France. IARC assessments go to national health agencies for possible guidance. IARC has reviewed more than 900 chemicals and other agents since its founding in 1971. IARC categorizes chemicals, agents, mixtures and exposures into five groups:

Group 1: carcinogenic to humans (includes alcoholic beverages, solar radiation, and wood dust).

Group 2A: probably carcinogenic to humans (includes high-temperature frying, household wood fires, and hairdressing/barber occupational exposures).

Group 2B: possibly carcinogenic to humans (includes cell phones and coffee).

Group 3: not classifiable as to carcinogenicity in humans (includes tea).

Group 4: probably not carcinogenic to humans. (Only one substance, caprolactam, has been placed by IARC in Group 4).

What are the health effects of asphalt emissions/fumes?

Short-term health effects from exposure to asphalt emissions have been shown to include headache, skin rash, sensitization, fatigue, reduced appetite, throat and eye irritation, and cough.

Who is exposed?

Studies have shown that people in the asphalt paving industry who work directly on highway-class paving machines – specifically, the paver operator and those who stand on the screed (flat area) at the back of the paver – are exposed.

They're paving my street – should I be worried? Should I worry about my kids?

There is no need to be worried about public health or about children. Studies have shown an extremely low level of exposure for workers who work directly on the paver, and even lower levels for anyone else. Again, the top occupational physician at the Laborers Union said, "People working in the asphalt paving industry should not be concerned about this new IARC classification."

What are you going to do about it?

The asphalt paving industry will continue to operate in a manner that is safe for workers.