

New Jersey Department of Health (DOH)

Paulsboro Train Derailment Incident – December 2012

Frequently Asked Questions

What is vinyl chloride?

Vinyl chloride is a colorless gas. It has a mild, sweet odor. It is a manufactured substance that does not occur naturally. Vinyl chloride is used to make polyvinyl chloride (PVC). PVC is used to make a variety of plastic products, including pipes, wire and cable coatings, and packaging materials.

What happens to vinyl chloride in the air? Does it break down? Does vinyl chloride stick to things or persist in the environment?

Vinyl chloride in the air breaks down in a few days, resulting in the formation of several other chemicals including hydrochloric acid, formaldehyde, and carbon dioxide. Before it breaks down, vinyl chloride tends to stay in the air and is not likely to build up on surfaces or in plants.

How can vinyl chloride in the air get into my body?

The main way that vinyl chloride in the air can enter your body is by breathing it in.

What happens to the vinyl chloride in my body once I have breathed it in?

When it is breathed in, vinyl chloride is absorbed through the lungs into your bloodstream and is circulated throughout the body. Once in the body, your liver changes it into several substances. Most of these new substances also travel in your blood; once they reach your kidneys, they leave your body in your urine. Most of the vinyl chloride and the new substances are gone from your body within a day after you breathe it in. However, some of the new substances react in the liver and, depending on how much vinyl chloride you breathe in, may produce damage there.

What kinds of immediate health effects are caused by breathing in vinyl chloride for hours or days? How long will symptoms last?

Short-term exposure to vinyl chloride in the air can result in irritation of the eyes, nose, throat, and lungs. Vinyl chloride exposure can also cause dizziness, sleepiness, headache, nausea, or tingling in the arms and legs.

Immediate effects from short-term exposure should resolve quickly once exposure has been stopped.

My children and I have asthma. How does vinyl chloride affect us?

Vinyl chloride can cause short-term worsening of asthma symptoms.

I am pregnant. Can breathing in vinyl chloride affect my pregnancy?

There is no conclusive evidence that breathing in vinyl chloride would harm the developing fetus. Some women who worked in vinyl chloride factories reported irregular menstrual periods, and some developed high blood pressure during pregnancy.

Are there long-term health effects that might happen because I breathed in vinyl chloride for several hours or several days?

It is not known whether short-term exposure to vinyl chloride can cause long-term health effects. People who have been exposed to high levels of vinyl chloride at work for long periods of time had an increased risk of a rare cancer, angiosarcoma of the liver. Workers exposed for long periods of time may also have had higher risks of other cancers, but the evidence for this is weak. Studies of workers have shown that exposure to vinyl chloride can cause damage to DNA, but signs of damage disappear after exposure is stopped.

What kind of medical tests are there to tell how much vinyl chloride I was exposed to? Are there medical tests to tell me if I am going to suffer from health effects due to vinyl chloride exposure?

There are ways to measure exposure to vinyl chloride in urine, but the test must be done within a day of short-term exposure. There are no medical screening tests which can determine whether there is a long term risk of health effects.

What should I tell my doctor to look for?

You should inform your doctor that you may have been exposed to vinyl chloride. You should follow all recommendations for routine medical care for adults and children. There are no specific tests that can or should be done.

There are physicians who are specially trained in environmental and occupational medicine. A list of these doctors may be found at the Association of Occupational and Environmental Clinics (AOEC) web site (<http://www.aoec.org>). This web site also has a list of Pediatric Environmental Health Specialty Units (PEHSUs). You can also call the New Jersey Department of Health at (609) 826-4920 for this information.

