

# THE FACTS VINYL CHLORIDE

Primary exposure to vinyl chloride occurs through inhalation. Prolonged exposure can cause cancer in the liver, brain, blood and lungs. Vinyl chloride is classified as Group 1 carcinogen by the IARC, meaning it is seen as a definite cause of cancer in humans.

## Where risks occur

The main route of occupational exposure to vinyl chloride is by inhalation, which occurs primarily in vinyl chloride/ PVC plants and in PVC-processing plants (including packaging, storage and handling of vinyl chloride). Industries at risk are manufacture of industrial chemicals, plastic products, fabricated metal products or machinery. But also in occupations or services allied to transport and construction.

## More about the substance

Vinyl chloride is a colorless gas that burns easily. It does not occur naturally and must be produced industrially for its commercial uses. Vinyl chloride is used primarily to make polyvinyl chloride (PVC); PVC is used to make a variety of plastic products, including pipes, wire and cable coatings and packaging materials. Vinyl chloride is also produced as a combustion product in tobacco smoke.

## How symptoms can affect you

Acute exposure to vinyl chloride can lead to symptoms that include weakness, dizziness, fatigue, weight loss, numbness and tingling of the extremities, visual disturbances and in severe cases to coma and death. It can also irritate the eyes, skin, mucous membranes and respiratory tract. At low exposure levels, the body is able to metabolize vinyl chloride and excrete it in urine. Chronic exposure can cause permanent liver injury and liver cancer, neurologic or behavioral symptoms and changes to the skin and bones of the hand.

Latency period between exposure and vinyl chloride related cancers varies strongly depending on the different types of cancer.

## What you can do

Perform proper exposure measurements so it is known when actions should be taken. Inform workers about the risks, appropriate resistant clothing and equipment and obligated preventive measures.

Best solution is to control exposure by elimination or substitution, for example replacing vinyl chloride by another non-carcinogenic substance, install ventilation systems or secure the processes. Make sure the right personal protective equipment and clothing is used, like safety goggles, chemical resistant clothing and gloves (chemical resistant or insulated) and respirators.

*References: cancer.gov, OSHA, IARC, CDC*