

# THE FACTS ACRYLAMIDE



About 54,000 workers in the EU are estimated to be potentially exposed to acrylamide. The occupational exposure to acrylamide is primarily from dermal contact with the solid monomer and inhalation of dust and vapor during acrylamide and polyacrylamide production. Its exposure increases the risk for several types of cancer (classified as group 2A by IARC i.e. probable human carcinogens). In the body, acrylamide is converted to a compound called glycidamide, which causes mutations and damage to DNA. The high levels of occupational acrylamide exposure may also cause neurological damage. However, studies of occupational exposure are currently limited and inconclusive.

## Where risks occur

Workers in the paper and pulp, construction, foundry, oil-drilling, textiles, cosmetics, food-processing, plastics, mining, and agricultural industries are potentially exposed to acrylamide.

## More about the substance

Acrylamide is an unsaturated amide that exists as a white, odorless crystalline solid at room temperature. It is primarily used to make substances called polyacrylamide and acrylamide copolymers which are used in many industrial processes, such as the production of paper, dyes, and plastics, and in the treatment of drinking water and wastewater, including sewage.

## How symptoms can affect you

The prolonged or repeated exposure through any route may cause muscular weakness, incoordination, skin rashes, excessive sweating of hands and feet, cold hands, peeling of the skin, numbness, abnormal skin or muscle sensations, fatigue, and cause central and peripheral nervous system damage. Prolonged exposure to acrylamide over years can cause several types of cancer through damaged DNA.

Latency period between exposure and acrylamide related cancer varies from 4 to 16 years.

## What you can do

Perform proper exposure measurements continuously so it is known when actions should be taken. Investigate if workers report early symptoms. Workers need to be aware of the effects of exposure.

Best solution is to control exposure, for example by avoiding dermal and inhalational contact. Ideally this involves the development of closed systems for handling acrylamide monomer. If possible, handling of the monomer in a confined space should be avoided. Workers handling the agent should wear long polyvinyl gloves and washable overalls. Install proper ventilation systems. Eating at the workplace should be prohibited. Workers should wash thoroughly at the end of each shift and after any unintentional exposure. Personal protective equipment should only be used as a last resort, after introducing the possible engineering solutions.

*References: cancer.gov, EFSA, IARC, EC, NIOSH, OSHA, CAREX*