

Intoxication with plastic (vinyl chloride or polyvinyl chloride)

Vinyl chloride is an organochloride with formula $\text{CH}_2=\text{CHCl}$ that is called vinyl chloride monomer (VCM). Vinyl chloride is a colorless gas with mild sweet odour. The half life of the vinyl chloride in the air is a few hours. VC chiefly is used to produce the polymer polyvinyl chloride. PVC is a plastic made ready for various uses by the addition of fillers, stabilizers, lubricants, plasticizers and pigment.

Uses: Most of the VC is used to make pvc, a material used to manufacture including pipes, wire and cable coatings and packaging materials. Smaller amounts of VC and PVC are used in furniture and automobile upholstery, wall coverings.

Assessing personal exposure to VC can be detected in urine and body tissues, but the test are reliable indicators.

Acute effect: CNS-dizziness, drowsiness, giddiness and headache. If we have extremely high levels of VC can caused loss of consciousness, lung edema or cardiac arrhythmia.

Chronic Effects (Noncancer)

1. Liver damage may result in humans from chronic exposure .
2. A small percentage of individuals occupationally exposed to high levels of VC in air have developed a set of symptoms termed "vinyl chloride disease" which is characterized by Raynaud`s phenomenon, changes in the bones at the end of the fingers, joint and muscle pain and scleroderma-like skin changes (tickening of the skin, decreased elasticity and slight edema)
3. CNS effect including dizziness, drowsiness, fatigue and headache, visual and/or hearing disturbances, memory loss and sleep disturbances. In the peripheral nervous system we have peripheral neuropathy, tingling, numbness, weakness and pain in the fingers

Cancer risk:

Inhaled vinyl chloride has been shown to increase the risk of a rare form of liver cancer (angiosarcoma of the liver) in humans. EPA has classified as group A human carcinogen.

Therapy: The patient should break contact with the harmful factors. The treatment is symptomatic.