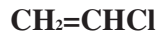


Vinyl chloride



[CAS No. 75-01-4]

Excess lifetime risk of Cancer Reference value

10^{-3} 1.5 ppm

10^{-4} 0.15 ppm

Estimated by the relative risk model

The estimation was made for the excess lifetime risk of cancer of 10^{-3} and 10^{-4} , following the procedure for benzene, a human carcinogen. WHO-Europe¹⁾ summarized the study of Nicholson et al.²⁾ as follows: 491 workers in poly-vinyl chloride production plants had a minimum of 5 years employment with an average work duration of 18 years. The average vinyl chloride monomer exposure was 2,050 mg/m³ (about 788.46 ppm). The standard mortality ratio for liver and biliary cancer was 2380 (taking 100 as a standard) (10 observed versus 0.42 expected). The application of the relative risk model in reference to the liver cancer death data for Japanese population³⁾ gave an

estimate of 1.5 and 0.15 ppm for the excess lifetime risk of cancer of 10^{-3} and 10^{-4} , respectively. It should be noted that the risk estimation was based on liver cancer death (and not on liver angiosarcoma death).

Year of proposal (revision): 2017

Year of proposal (revision): 2016 pending

Year of proposal: 1975

Exposure concentration should be kept below a detectable limit though OEL is set at 2.5 ppm provisionally.

References

- 1) WHO Regional Office for Europe (2000) Air Quality Guidelines for Europe, Second Version. 5.16 Vinyl chloride. p. 118–119.
- 2) Nicholson WJ, Henneberger PK, Seidman H. Occupational hazards in the VC-PVC industry. Progress in Clinical and Biological Research 1984; 141: 155–175.
- 3) Ministry of Health, Labour and Welfare, the Government of Japan editors. 2014 Census, Health and Labour Statistics Association, Tokyo, 2016.