

Carbon disulfide
CS₂
[CAS No.75-15-0]
OEL-M: 1ppm (3.13 mg/m³) (skin)
Reproductive toxicants: Group 1

Summary of OEL-M documentation

Health effects of carbon disulfide on the cardiovascular system and an increase in microaneurysm formation in the retina were observed at 3.4 (Omae *et al.*¹⁾) to 5 ppm (Takebayashi *et al.*²⁾). Effects on the peripheral nerves in terms of reduction in conduction velocity were detected even at lower exposure levels. Thus, Hirata *et al.*³⁾ (1984) observed a reduction in ulnar nerve at 1.45 ppm, and Johnson *et al.*⁴⁾ detected a decrease in peroneal nerve at <1 ppm. In contrast, Cirila and Grazino⁵⁾ did not find effects at 6.4 ppm. Taking these findings together, an occupational exposure limit of 1 ppm is proposed.

Year of Proposal (revision): 2015

Year of Proposal (revision): 1974 (OEL-M 10 ppm, skin)

Year of Proposal: 1961 (OEL-M 20 ppm, skin)

References

- 1) Omae K, Takebayashi T, Nomiya T, Ishizuka C, Nakamura H, Uemura T, Tanaka S, Yamauchi T, O'Uchi T, Horiuchi Y, Sakurai H. Cross sectional observation of the effects of carbon disulfide on arteriosclerosis in rayon manufacturing workers. *Occup Environ Med* 1998; 55: 468–72.
- 2) Takebayashi T, Nishikawa Y, Uemura T, Nakashima H, Nomiya T, Sakurai H, Omae K. A six-year follow-up study of subclinical effects of carbon disulfide exposure on cardiovascular system. *Occup Environ Med* 2004; 61: 127–34.
- 3) Hirata M, Sugimoto K, Misumi J, Goto S, Gu X-q, Liang Y-x, Jin X-p, Gu S-w, Chen Z-q, Ding Z-l, Shen G-q. A neurophysiological study among Chinese CS₂-exposed workers. *G Ital Med Lav* 1984; 6: 107–11.
- 4) Johnson BL, Boyd J, Burg JR, Lee ST, Xintaras C, Albricht BE. Effects on the peripheral nervous system of workers' exposure to carbon disulfide. *NeuroToxicology* 1983; 4: 53–66.
- 5) Cirila AM, Graziano C. Health impairment in viscose-rayon workers with carbon disulphide risk below 30 mg/m³. An exposed-controls study. *G Ital Med Lav* 1981; 3: 69–73.