

Beryllium and Beryllium Compounds

Be

[CAS No.7440-41-7]

Occupational carcinogen: Group 1

Summary of classification

The Japan Society for Occupational Health (JSOH) recommended occupational exposure limit for beryllium and beryllium compounds in 1963¹⁾ and judged as Group 2A for the classification of carcinogenicity²⁾. This time, since a sufficient number of cohort studies accumulated and significantly increased risk was observed for cancer of the lung, we judged that there is sufficient evidence in epidemiological data for the carcinogenicity of beryllium and beryllium compounds. Also, in experimental animals, there is sufficient evidence for increasing malignant lung tumor incidence by intratracheal administration or inhalation of beryllium and beryllium compounds in rats. The IARC raised the classification from Group 2A, a 'probable human carcinogen' (Monograph Supplement 7 [1987])^{3,4)}, to Group 1, a 'human carcinogen' (monograph Vol. 98 [1993])^{5,6)}, based on the judgement that there is sufficient evidence for carcinogenicity.

Based on these findings, it is proposed that the classification of carcinogenicity of beryllium and beryllium compounds should be changed from Group 2A to Group 1 in

the JSOH.

Years of Proposal (revision): 2015

Years of Proposal: 1986 (Group 2A)

References

- 1) Craig JL. Adaptation of occupational medicine techniques to community health care. *Journal of Occupational Health* 1972; 14 (1): 50.
- 2) Sakurai H. Recommendations of permissible concentration etc. (1986). *Sangyo Igaku* 1986; 28: 215-30.
- 3) Groth DH, Kommineni C, Mackay GR. Carcinogenicity of beryllium hydroxide and alloys. *Environmental Research* 1980; 21 (1): 63-84.
- 4) Schepers GW, Durkan TM, Delahant AB, et al. The biological action of inhaled beryllium sulfate; a preliminary chronic toxicity study on rats. *A.M.A Archives of Industrial Health* 1957; 15 (1): 32-58.
- 5) Ward E, Okun A, Ruder A, et al. A mortality study of workers at seven beryllium processing plants. *American Journal of Industrial Medicine* 1992; 22 (6): 885-904.
- 6) Schubauer-Berigan MK, Deddens JA, Steenland K, et al. Adjustment for temporal confounders in a reanalysis of a case-control study of beryllium and lung cancer. *Occupational and Environmental Medicine* 2008; 65 (6): 379-383.