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## POTASSIUM HYDRO

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*OSHA comments from the January 19, 1989 Final Rule on Air Contaminants Project extracted from 54FR2332 et. seq. This rule was remanded by the U.S. Circuit Court of Appeals and the limits are not currently in force.*

**CAS:** 1310-58-3; **Chemical Formula:** KOH

OSHA had no former limit for potassium hydroxide. A ceiling limit of 2 mg/m<sup>3</sup> was proposed by the Agency based on the ACGIH recommendation, and NIOSH (Ex. 8-47, Table N1) concurred with this proposal. OSHA has concluded that this limit is necessary to afford workers protection from irritant effects and is establishing the 2-mg/m<sup>3</sup> ceiling limit for potassium hydroxide in the final rule. Potassium hydroxide is a white, deliquescent material that occurs in the form of pellets, sticks, lumps, or flakes.

Potassium hydroxide is corrosive to tissues. The health hazards of potassium hydroxide are similar to those of the other strong alkalis, such as sodium hydroxide. These substances gelatinize tissue on contact, causing deep, painful lesions. Dust or mist exposures may cause eye or respiratory system irritation and nasal septum lesions (Karpov 1971/ Ex. 1-1115).

Mr. Gary Melampy of the Independent Lubricant Manufacturers Association (ILMA) (Ex. 3-830) commented that there was no basis for establishing an occupational limit for potassium hydroxide. OSHA disagrees and notes that the irritant effects of potassium hydroxide dusts, mists, and aerosols have been documented (ACGIH 1986/Ex. 1-3, p. 495; Karpov 1971/ Ex. 1-1115). Although dose-response data are lacking for this substance, it is reasonable to expect potassium hydroxide to exhibit irritant properties similar to those of sodium hydroxide, a structurally related strong alkali. In its criteria document, NIOSH (1976k/Ex. 1-965) cites a personal communication (Lewis 1974), which reported that short-term exposures (2 to 15 minutes) to 2 mg/m<sup>3</sup> sodium hydroxide caused "noticeable" but not excessive upper respiratory tract irritation. Therefore, OSHA finds that the 2-mg/m<sup>3</sup> ceiling limit will provide workers with an environment that minimizes respiratory tract irritation, which the Agency considers to be material impairment of health. To reduce these risks, OSHA is establishing a ceiling limit of 2 mg/m<sup>3</sup> for potassium hydroxide.

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