

研究論文

KOH担持活性炭を用いたフィルターの酢酸除去に関する研究

廣瀬 孝,* 葛西 裕,* 遠田 幸生,** 櫛引 正剛*

Study on Removal of Acetic Acid by Filter with Potassium Hydroxide-loaded Activated Carbon

Takashi HIROSE[†], Yutaka KASAI[†], Yukio ENDA^{††} and Masanori KUSHIBIKI[†]

In this work, we selected potassium hydroxide (KOH) as a chemical agent for acetic acid (CH_3COOH) removal and loaded KOH on activated carbon. We considered the influence of KOH-loading on the specific surface area, the pore volume and the removal ability of CH_3COOH in order to use KOH loaded activated carbon as air purifier filters. The KOH-loading of activated carbon proportionally increases with increasing the concentration of KOH aqueous solution, while the specific surface area and the pore volume show decreasing trends with the increase of KOH-loading. We find that KOH is easily loaded in the micropores smaller than 1 nm and loaded on the surface region of activated carbon as well as in the larger pores with increasing KOH-loading. The deodorization performance of KOH loaded activated carbon as purifier filters was also evaluated using Tobacco. Activated carbon with the higher KOH-loading shows a shorter removal time of CH_3COOH and has an ability of treating the larger number of tobacco, while the rate of increase of the number of tobacco which activated carbon can treat is small compared with that of KOH-loading increase.

Key Words : acetic acid, activated carbon, filter, specific surface area, pore volume