ISRP 2002 abstract

Presenter/author	Title	Abstract
Enjoji, Takaharu Yamada, Hiroshi *Research Dept., Shigematsu Works Co., Saitama, Japan*	**An Evaluation of Filtering Efficiency for Reusable-Particulate Respirators Simulating Actual Conditions**	The Ministry of Health, Labor and Welfare published the new regulation for particulate respirators in Sept. 2000. This regulation adopts a continuous measurement method (loading) for the filtering efficiency that NIOSH adopted in 1995. Unlike the measurement of initial filtering efficiency adopted in the previous regulation, this method can evaluate a declining filtering efficiency caused by filter degradation. However, this regulation may not always meet the actual working conditions, because users of reusable-particulate respirators tend to use one filter repeatedly. Therefore we evaluated the performance of RL2-series (filtering efficiency : more than 95% against DOP) electrostatic and mechanical filters, and RS2-series (filtering efficiency : more than 95% against NaCl) electrostatic filters when loaded intermittently with a challenge aerosol of approximately 50mg/day for 5 days, simulating actual conditions. As a result, the filtering efficiency for electrostatic filters declined as the loaded volume increased, while mechanical filters maintained a high filtering efficiency against any challenge aerosols. NIOSH suggested service-time limits for N and R-series filters to take into consideration the filter degradation. Regarding use limitation, we recommend some actions like NIOSH should be taken in the Japanese regulation for reusable-particulate respirators in the future.