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**Evaluation of detection threshold in liquid scintillation counting\***

Yoshio HOMMA and Yuko MURASE

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The advantages of integral counting techniques using a liquid scintillation spectrometer in providing a convenient method for the determination of absolute disintegration rates of radioactive sources of low specific activity and/or low energy have been demonstrated in a number of investigations. Unfortunately, the simple extrapolation of an integral counting rate curve to zero bias gives, not the absolute disintegration rate, but the number of disintegration rate that release, in the solution, energy equal to or greater than the detection threshold of the scintillator. We have determined the figure of merit for absolutely counting beta emitters in a liquid scintillator using a common piece of apparatus. Experiments comparing the results of absolute disintegration rate determination by the integral counting technique with the efficiency tracing method have been carried out in our laboratories. The agreement between the results of both method is very satisfactory.

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