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Determination of the number of atoms of the long-lived nuclide ^{126}Sn by γ -ray spectrometry

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收稿日期 2009-1-4 修回日期 2009-5-19 网络版发布日期 2009-12-9 接受日期 2009-12-9

摘要

By using HPGe γ -ray spectrometry, the activity of the long-lived fission product ^{126}Sn in a SnOB_2 sample was measured. The number of ^{126}Sn atoms and the ratio of ^{126}Sn to Sn were calculated based on the half-life value of $2.35 \times 10^5 \text{a}$ and the chemical stoichiometry. The result of the ratio of ^{126}Sn to Sn, $(1.033 \pm 0.037) \times 10^{-8}$, is consistent with the results measured by the accelerator mass spectrometry (AMS) within uncertainty limits, which confirms our procedures in the measurement of ^{126}Sn by AMS and lays a foundation for the AMS measurement of ^{126}Sn at much lower levels.

关键词 [\$^{126}\text{Sn}\$, activity measurement, \$\gamma\$ -ray spectrometry, AMS](#)

分类号

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