

研究简报

六氟化铀中杂质元素热中子吸收的硼当量的测定和评价

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摘要 <正> 一般杂质元素对热中子的吸收,以相当于硼的量来表示,称为热中子吸收的硼当量。美国材料试验学会(ASTM)的规格中规定六氟化铀中总杂质元素吸收热中子的硼当量不得大于8 ppm,因为硼当量过大会无效地消耗中子,影响核燃料元件的反应性。 设杂质元素与硼的吸收热中子等效,则根据两者吸收中子的反应速率(R)相等,可得

关键词 [硼当量](#) [热中子吸收](#) [六氟化铀](#)

分类号

DETERMINATION AND ESTIMATION OF BORON EQUIVALENT OF THERMAL NEUTRON ABSORPTION OF IMPURITY ELEMENTS IN URANIUM HEXAFLUORIDE

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Abstract A formula for the calculation of boron equivalent of impurity elements in uranium hexafluoride was deduced. The sum of boron equivalents of eight elements (Gd, B, Sm, Eu, Cd, Li, Dy, Cl) which possess larger boron equivalent factors was calculated by using experimental data. It contributes over 95% of the total boron equivalent of all the impurity elements (40 elements). In general, boron equivalent of above-mentioned eight elements may be used for the estimation of the total boron equivalent of all the impurity elements.

Key words [Boron equivalent](#) [Thermal neutron absorption](#) [Uranium hexafluoride](#)

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