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[\[PDF \(543K\)\]](#) [\[References\]](#)**Determination of Total Fluoride in Boron-containing Solutions**[Siyingaowa BORJIGIN^{1\)}](#), [Toshiaki YOSHIOKA^{1\)}](#) and [Tadaaki MIZOGUCHI^{2\)}](#)1) *Graduate School of Environmental Studies, Tohoku University*2) *Environment Conservation Research Institute, Tohoku University*

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We describe a pretreatment method before determining the total fluoride in solutions containing tetrafluoroborate ion (BF_4^-) with ion-selective electrodes (ISEs). BF_4^- was quantitatively converted to free fluoride by reacting with aluminum ions. The total fluoride concentration was then determined by ISE analysis without preliminary steam distillation using a tartrate- and tris(hydroxymethyl)methylamine (TRIS)-based total ionic strength adjustment buffer (TISAB). We investigated the effects of various factors on the decomposition of BF_4^- with aluminum ions, including the concentration of aluminum, pH, reaction temperature, and reaction time. The quantitative decomposition of BF_4^- was complete after 2 h at 50°C or 1 h at 70°C.

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