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<th>STANDARD MOLAL REAL FREE ENERGIES OF SOLVATION OF INDIVIDUAL IONS AND ELECTROMOTIVE FORCES OF SINGLE ELECTRODES IN NON-AQUEOUS SOLUTIONS: AN ADDITIONAL REMARK</th>
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<td>Author(s)</td>
<td>MATSUDA, A.; NOTOYA, R.</td>
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<tr>
<td>Citation</td>
<td>JOURNAL OF THE RESEARCH INSTITUTE FOR CATALYSIS HOKKAIDO UNIVERSITY, 28(1), 67-71</td>
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HOKKAIDO UNIVERSITY
STANDARD MOLAL REAL FREE ENERGIES
OF SOLVATION OF INDIVIDUAL IONS
AND ELECTROMOTIVE FORCES OF
SINGLE ELECTRODES IN NON-
AQUEOUS SOLUTIONS
— An Additional Remark —

By

A. MATSUDA*) and R. NOTOYA*)
(Received May 30, 1980)

The values of the standard molal real free energies of solvation \( \alpha_Y \)'s of
monoatomic ions in non-aqueous solvents at 25°C and those of the standard
electromotive forces \( \psi_Y \)'s referred to the standard state of the gaseous electron
at 25°C were estimated in the previous work\(^1\) by an empirical method which
was developed on the basis of the standard electromotive forces referred to the
standard hydrogen electrode.

In the present addendum article Table II in the previous work\(^1\) in which
the values of \( \alpha_Y \) and \( \psi_Y \) for 17 ionic species were listed are supplemented by 54
ionic species for which we have no experimental data of the standard electromotive forces referred to a definite reference electrode in non-aqueous solvents.
The values of \( \alpha_Y \) and \( \psi_Y \) for such ions are calculated by Eqs. (14) and (8)
\[ \kappa YF(\psi Y - \psi YH) = \alpha Y - \alpha YH, \ldots (14), \quad \frac{1}{\kappa Y} \alpha Y = \beta X, \ldots (8) \]
using the \( \beta \)-values in Table I in the previous work\(^1\) and \( \alpha_YH \)-values reported in
Ref. 2, and are listed in Tables I and II with the symbol \# in the present article.
For convenience Table II in the previous work are also repeated in these tables
(for the symbols *) and **), see Ref. 1).

References


*) The Research Institute for Catalysis, Hokkaido University, Sapporo, 060 Japan.
A. Matsuda and R. Notoya

Table I. Standard molal real free energies of solvation of individual ions $-\Delta G^*/z$ in non-aqueous solvents at 25°C in electron volts

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### Free Energies of Solvation of Ions and EMF of Single Electrodes

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Free Energies of Solvation of Ions and EMF of Single Electrodes

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