LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1. Details (Purity and provenance, etc.) of the cosolutes used.</td>
<td>71-71</td>
</tr>
<tr>
<td>3.2. Details (Purity and provenance, etc.) of the solutes used.</td>
<td>72-72</td>
</tr>
<tr>
<td>4.1. Densities ($\rho$) and viscosities ($\eta$) of the aqueous sodium malonate solutions at $T = (298.15$ to $318.15) \text{ K}$.</td>
<td>87-87</td>
</tr>
<tr>
<td>4.2. Molalities ($m$), densities ($\rho$), viscosities ($\eta$), and apparent molar volumes ($\phi^n_v$) of nicotinic acid in aqueous sodium malonate solutions at $T = (298.15$ to $318.15) \text{ K}$.</td>
<td>88-90</td>
</tr>
<tr>
<td>4.3. Partial molar volumes ($\phi^n_v$) and the slopes ($S^n_v$) of Eq. (2) for nicotinic acid in aqueous sodium malonate solutions with corresponding standard deviations ($\sigma$).</td>
<td>92-92</td>
</tr>
<tr>
<td>4.4. Partial molar expansibilities ($\phi^0_E$), it’s temperature dependence ($\partial \phi^0_E / \partial T$)$_P$ and the slopes ($S^0_E$) of Eq. (6) for nicotinic acid in aqueous sodium malonate solutions at $T = 298.15$ to $318.15 \text{ K}$.</td>
<td>99-99</td>
</tr>
<tr>
<td>4.5. Viscosity $B$-coefficient of nicotinic acid with the correlation coefficients ($R^2$), standard deviations ($\sigma$) for linear regression of Eq. (7) along with the solvation number ($S^n_S$) in aqueous sodium malonate solutions at $T = (298.15$ to $318.15) \text{ K}$.</td>
<td>102-102</td>
</tr>
<tr>
<td>4.6. Values of $\phi^n_{v,2} - \phi^n_{v,1}$, $\Delta \mu^{0#}_1$, $\Delta \mu^{0#}_2$, $T \Delta S^{0#}_2$ and $\Delta H^{0#}_1$ for nicotinic acid in aqueous sodium malonate solutions at different temperatures.</td>
<td>103-104</td>
</tr>
<tr>
<td>5.1. Molalities ($m$), densities ($\rho$), viscosities ($\eta$), and apparent molar volumes ($\phi^n_v$) of L-ascorbic acid in aqueous sodium malonate solutions at $T = (298.15$ to $318.15) \text{ K}$.</td>
<td>111-113</td>
</tr>
<tr>
<td>5.2. Partial molar volumes ($\phi^n_v$) and the slopes ($S^n_v$) of Eq. (2) for L-ascorbic acid in aqueous sodium malonate solutions with corresponding standard deviations ($\sigma$)</td>
<td>116-116</td>
</tr>
</tbody>
</table>
Table

5.3. Partial molar expansibilities ($\phi_0^E$), its temperature dependence
($\partial \phi_0^E / \partial T)_p$ and the slopes ($S_E^i$) of Eq. (6) for L-ascorbic acid in aqueous
sodium malonate solutions at $T = (298.15$ to $318.15)$ K.

5.4 Viscosity $B$-coefficients of L-ascorbic acid with the correlation
coefficients ($R^2$), standard deviations ($\sigma$) for linear regression of Eq. (7)
along with the solvation number ($S_n$) in aqueous sodium malonate
solutions at $T = (298.15$ to $318.15)$ K.

5.5. Values of $\phi_{V2}^0 - \phi_{V1}^0$, $\Delta \mu_i^{0S}$, $\Delta \mu_2^{0S}$, $\Delta H_2^{0S}$ and
$T \Delta S_2^{0S}$ for L-ascorbic acid in aqueous sodium malonate solutions at $T = (298.15$ to $318.15)$ K.

6.1. Densities ($\rho$) and viscosities ($\eta$) of different aqueous uracil solutions
at $T = (298.15$ to $318.15)$ K

6.2. Molalities ($m$), densities ($\rho$), viscosities ($\eta$), and apparent molar
volumes ($\phi_V$) of paracetamol in aqueous uracil solutions at $T = (298.15$ to $318.15)$ K

6.3. Partial molar volumes ($\phi_V^0$), the slopes ($S_V^i$) of Eq. (2) and for
paracetamol in aqueous uracil solutions with corresponding standard
deviations ($\sigma$)

6.4. Partial molar expansibilities ($\phi_0^E$), it’s temperature dependence
($\partial \phi_0^E / \partial T)_p$ and the slopes ($S_E^i$) of Eq. (4) for paracetamol in aqueous uracil
at $T = (298.15$ to $318.15)$ K.

6.5. Viscosity $B$-coefficients of paracetamol with the correlation
coefficients ($R^2$), standard deviations ($\sigma$) for linear regression of Eq. (7),
solvation number ($S_n$) in aqueous uracil solutions at $T = (298.15$ to $313.15)$ K

6.6. Values of $\phi_{V2}^0 - \phi_{V1}^0$, $\Delta \mu_i^{0S}$, $\Delta \mu_2^{0S}$, $T \Delta S_2^{0S}$ and $\Delta H_2^{0S}$ for paracetamol
in aqueous uracil solutions at $T = (298.15$ to $318.15)$ K.
7.1. Densities ($\rho$) and viscosities ($\eta$) of different aqueous solutions of glycine at $T = (298.15$ to $313.15)\ \text{K}$.

7.2. Molalities ($m$), densities ($\rho$), viscosities ($\eta$) and apparent molar volumes ($\phi_v$) of sodium pyruvate in various aqueous glycine solutions at $T = (298.15 - 313.15)\ \text{K}$.

7.3. Partial molar volumes ($\phi_v^0$) and the corresponding slopes ($S_v^+$) from Eq. (2) for sodium pyruvate in various aqueous glycine solutions with respective standard deviations at $T= (298.15- 313.15)\ \text{K}$.

7.4. Limiting partial molar expansibilities ($\phi_E^0$), it’s temperature dependence ($\partial\phi_E^0/\partial T$)$_p$ and the slopes ($S_E$) of Eq. 6 for for sodium pyruvate in different aqueous glycine solutions at $T= (298.15- 313.15)\ \text{K}$.

7.5. Viscosity $A$ and $B$-coefficients of sodium pyruvate, standard deviations ($\sigma$) for linear regression of Eq. (7) in aqueous solutions of glycine at $T= (298.15- 313.15)\ \text{K}$.

7.6. Values of $\phi_v^0 - \phi_{v1}^0$, $\Delta\mu_1^0$, $\Delta\mu_2^0$, $T\Delta S_2^0$, $\Delta H_2^0$ for sodium pyruvate in various aqueous glycine solutions at $T= (298.15- 313.15)\ \text{K}$.

8.1. Density ($\rho$) and viscosity ($\eta$) for different aqueous solutions of L-alanine at $T= (298.15 - 313.15)\ \text{K}$.

8.2. Molalities ($m$), densities ($\rho$), viscosities ($\eta$) and apparent molar volumes ($\phi_v$) of sodium pyruvate in various aqueous L-alanine solutions at $T = (298.15 - 313.15)\ \text{K}$.

8.3. Partial molar volumes ($\phi_v^0$) and the corresponding slopes ($S_v^+$) from Eq. (2) for sodium pyruvate in different aqueous L-alanine solutions with respective standard deviations at $T= (298.15- 313.15)\ \text{K}$.

8.4. Standard partial molar expansibilities ($\phi_E^0$), it’s temperature dependence ($\partial\phi_E^0/\partial T$)$_p$ and the slopes ($S_E$) of Eq. 6 for sodium pyruvate in aqueous L-alanine solutions at $T = (298.15 - 313.15)\ \text{K}$.
Table 8.5. Viscosity $A$ and $B$-coefficients of sodium pyruvate, standard deviations ($\sigma$) for linear regression of Eq. (7) in aqueous solutions of L-alanine at $T = (298.15$ to $313.15)$ K.

Table 8.6. Values of $\phi_{V,2}^0 - \phi_{V,1}^0$, $\Delta\mu_1^{0\#}$, $\Delta\mu_2^{0\#}$, $T\Delta S_2^{0\#}$ and $\Delta H_2^{0\#}$ for sodium pyruvate in different aqueous L-Alanine solutions of at $T = (298.15$ to $313.15)$ K.

Table 9.1. Molalities ($m$), densities ($\rho$), viscosities ($\eta$) and apparent molar volumes ($\phi_v$) of caffeine in different aqueous uracil solutions at $T = 298.15$ to $318.15$ K.

Table 9.2. Partial molar volumes ($\phi_v^0$) and the slopes ($S_v^\phi$) of Eq. (2) and for caffeine in aqueous uracil solutions with corresponding standard deviations ($\sigma$).

Table 9.3. Standard partial molar expansibilities ($\phi_E^0$), it’s temperature dependence ($\partial\phi_E^0/\partial T$) and the slopes ($S_E$) of Eq. 4 for caffeine in aqueous uracil solutions at $T= (288.15$ to $313.15)$ K.

Table 9.4. Viscosity $B$-coefficients of caffeine with the correlation coefficients ($R^2$), standard deviations ($\sigma$) for linear regression of Eq. (7) along with the solvation number ($S_v$) in aqueous uracil solutions at $T = (298.15$ to $318.15)$ K.

Table 9.5. Values of $\phi_{V,2}^0 - \phi_{V,1}^0$, $\Delta\mu_1^{0\#}$, $\Delta\mu_2^{0\#}$, $T\Delta S_2^{0\#}$ and $\Delta H_2^{0\#}$ for caffeine in aqueous uracil solutions at $T = (298.15$ to $318.15)$ K.

Table 10.1. Densities ($\rho$) and viscosities ($\eta$) and pH of different aqueous sodium gluconate solutions at $T = (298.15$ to $318.15)$ K.

Table 10.2. Molalities ($m$), densities ($\rho$), viscosities ($\eta$), apparent molar volumes ($\phi_v$) and apparent specific volumes ($\phi_{V,sp}$) of nicotinic acid in aqueous sodium gluconate solutions at $T = (298.15$ to $318.15)$ K.
10.3. Standard partial molar volumes ($\phi_V^0$), the slopes ($S_V^*$) and corresponding standard deviations ($\sigma$) for nicotinic acid in aqueous sodium gluconate solutions at $T = (298.15$ to $318.15)$ K.

10.4. Standard partial molar expansibilities ($\phi_E^0$) for nicotinic acid in aqueous solutions of sodium gluconate at $T = (298.15$ to $318.15)$ K.

10.5 Viscosity B-coefficients of nicotinic acid with the correlation coefficients ($R^2$), standard deviations ($\sigma$) for linear regression of Eq. (7) along with the solvation number ($S_n$) in aqueous solutions of sodium gluconate at $T = (298.15$ to $318.15)$ K.

10.6. Values of $\Delta \mu_1^{0a}$, $\Delta \mu_2^{0a}$ for nicotinic acid in aqueous solutions of sodium gluconate at $T = (298.15$ to $318.15)$ K.

10.7. Values of $\Delta H_1^{0h}$, $\Delta H_2^{0a}$, $\Delta S_1^{0a}$ and $\Delta S_2^{0a}$ for nicotinic acid in sodium gluconate solutions.