parameter $\mathring{a}$, and an arbitrary but reasonable value (5 Å)[12] was assumed for this in the parameter fit. The molar association constant, K_γ, was then calculated from equation (2) and was found to be relatively insensitive to the choice of $\mathring{a}$.

$$K_\gamma = (1-\gamma)/\gamma^2 cf^2 \qquad (2)$$

If $\mathring{a}$ was treated as an additional adjustable parameter the value of K_A in equation (1) was found to approach the value of K_γ after lengthy iteration.

Equation (2) was evaluated at each experimental concentration and the values of K_γ were found to have a spread of $\pm 10\%$; the average value is given in Table 2. The other rows in Table 2 give values of Λ^0, accurate to ± 2 in the last figure.

TABLE 2

CONDUCTANCE PARAMETERS

Λ^0 in cm^2 Ω^{-1} mol^{-1}, $K\gamma$ in l. mol^{-1}

Salt	T (°K)	Parameter	Value of Conductance Parameters for P (bar) 1	506	1013	2026	3040
			Acetone				
mmpI	293·1	Λ^0	198	162	124	90	68
		K_γ	596	487	242	162	133
	303·1	Λ^0	209	170	140		74
		K_γ	638	451	313		210
	313·1	Λ^0	262	215	168	127	93
		K_γ	1010	782	469	384	277
NaI	298·1	Λ^0	184[a]				
		K_A	170[a]				
			Bu^{t}OH				
mmpI	303·1	Λ^0	16·2	11·1	8·20	4·84	3·20
		K_γ	4795	3212	2670	2203	2402
NaI	298·1	Λ^0	11·8	8·50	6·20	3·62	2·30
		K_γ	858	599	440	281	219
	308·1	Λ^0	14·3	10·5	7·90	4·87	3·20
		K_γ	914	647	483	313	245

[a] Ref. 12.

Some measured conductances are plotted against $\sqrt{c}$ in Figure 1. The solid curves are drawn through values calculated from equation (1) and the straight lines give the Onsager tangents. The dashed interpolations follow the pattern of a type III phoreogram.[3] The conductances measured by Detoit and Duperthuis[13] and the Λ^0 values obtained from them by Walden[14] are higher than those found by extrapolating our values. Doubts about their reliability were already expressed by Walden.[15]

[12] Janz, G. J., and Tait, M. J., *Can. J. Chem.*, 1967, **45**, 1101.

[13] Detoit, P., and Duperthuis, H., *J. Chim. phys.*, 1908, **6**, 726.

[14] Walden, P., in "Landolt–Börnsteins Tabellen", 5th Edn, Suppl. Vol. 1, p. 632. (Springer: Berlin 1961.)

[15] Walden, P., *Z. phys. Chem.*, 1911, **78**, 257.

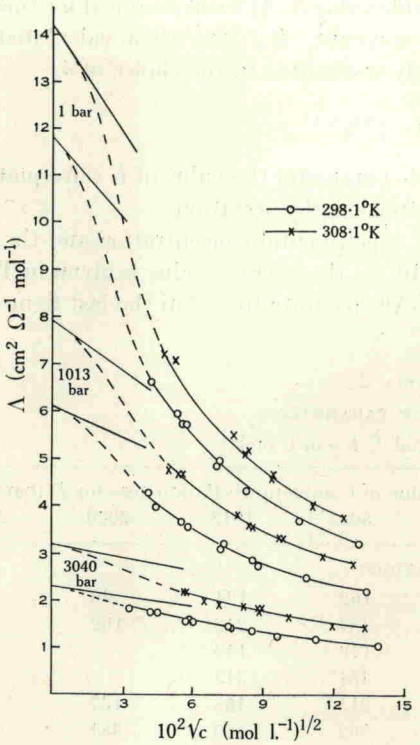

Fig. 1.—Conductance of NaI in Bu^{i}OH as a function of concentration at 1, 1013, and 3040 bar. The solid curves are calculated from equation (1).

TABLE 3

THERMODYNAMIC QUANTITIES FOR ION ASSOCIATION

ΔG and ΔH in kJ mol^{-1}; ΔS in J mol^{-1} K^{-1}; ΔV in cm^3 mol^{-1}

Quantity[a]	Thermodynamic Quantities at 303·1°K for P (bar)				
	1	506	1013	2026	3040
			mmpI in Acetone		
ΔG	−22·8	−22·1	−21·2	−20·8	−20·5
ΔH	+19	+16	+24	+32	+27
ΔS	+140	+130	+150	+170	+150
ΔV		+16	+16	+4	+3
			mmpI in Bu^{i}OH		
ΔG	−27·2	−26·6	−26·1	−25·7	−26·0
ΔV		+17	+8	+4	0
			NaI in Bu^{i}OH		
ΔG	−23·0	−22·3	−21·6	−20·6	−20·0
ΔH	+4·2	+5·0	+6·3	+7·1	+7·9
ΔS	88	+92	+92	+92	+92
ΔV		+17	+13	+10	+6

[a] Errors: ΔG ±0·3 kJ mol^{-1}; ΔH ±0·6 kJ mol^{-1}; ΔS ±3·5%; ΔV ±1 cm^3 mol^{-1}.