

Thermodynamic Properties
of the Coexisting Phases
and Thermochemical Properties
of the NaCl Component
in Boiling NaCl Solutions

GEOLOGICAL SURVEY BULLETIN 1421-B



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Thermodynamic Properties of the Coexisting Phases and Thermochemical Properties of the NaCl Component in Boiling NaCl Solutions

By JOHN L. HAAS, JR.

PRELIMINARY STEAM TABLES FOR NaCl SOLUTIONS

GEOLOGICAL SURVEY BULLETIN 1421-B

Tables giving the temperature-vapor pressure-density-molal volume-molal enthalpy-molal entropy relations for the coexisting liquid and gas and the partial molal volume, enthalpy, and entropy of the NaCl component in the coexisting phases between 80° and 325° C up to saturation in halite



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METRIC-ENGLISH EQUIVALENTS

Metric unit	English equivalent	Metric unit	English equivalent
Length		Specific combinations—Continued	
millimetre (mm)	= 0.03937 inch (in.)	litre per second (l/s)	= .0353 cubic foot per second
metre (m)	= 3.28 feet (ft)	cubic metre per second	= 91.47 cubic feet per second per square kilometre [(m ³ /s)/km ²]
kilometre (km)	= .62 mile (mi)	metre per day (m/d)	= 3.28 square mile [(ft ² /s)/mi ²]
Area		metre per day (m/d)	= 3.28 square mile [(ft ² /s)/mi ²]
square metre (m ²)	= 10.76 square feet (ft ²)	metre per kilometre (m/km)	= 5.28 feet per mile (ft/mi)
square kilometre (km ²)	= .386 square mile (mi ²)	kilometre per hour (km/h)	= .9113 foot per second (ft/s)
hectare (ha)	= 2.47 acres	metre per second (m/s)	= 3.28 feet per second
Volume		metre squared per day (m ² /d)	= 10.764 feet squared per day (ft ² /d) (transmissivity)
cubic centimetre (cm ³)	= 0.061 cubic inch (in ³)	cubic metre per second (m ³ /s)	= 22.826 million gallons per day (Mgal/d)
litre (l)	= 61.03 cubic inches	cubic metre per minute (m ³ /min)	= 264.2 gallons per minute (gal/min)
cubic metre (m ³)	= 35.31 cubic feet (ft ³)	litre per second (l/s)	= 15.85 gallons per minute
cubic hectometre (hm ³)	= 810.7 acre-feet	litre per second per metre [(l/s)/m]	= 4.83 gallons per minute per foot [(gal/min)/ft]
litre	= 2.113 pints (pt)	kilometre per hour (km/h)	= .62 mile per hour (mi/h)
litre	= 1.96 quarts (qt)	metre per second (m/s)	= 2.237 miles per hour
litre	= .26 gallon (gal)	gram per cubic centimetre (g/cm ³)	= 62.43 pounds per cubic foot (lb/ft ³)
cubic metre	= .00026 million gallons (Mgal or 10 ⁶ gal)	gram per square centimetre (g/cm ²)	= 2.048 pounds per square foot (lb/ft ²)
cubic metre	= 6.290 barrels (bbl) (1 bbl=42 gal)	gram per square centimetre	= .0142 pound per square inch (lb/in ²)
Weight		Temperature	
gram (g)	= 0.035 ounce, avoirdupois (oz avdp)	degree Celsius (°C)	= 1.8 degrees Fahrenheit (°F)
gram	= .0022 pound, avoirdupois (lb avdp)	degrees Celsius (temperature)	= [(1.8×°C) + 32] degrees Fahrenheit
tonne (t)	= 1.1 tons, short (2,000 lb)		
tonne	= .98 ton, long (2,240 lb)		
Specific combinations			
kilogram per square centimetre (kg/cm ²)	= 0.96 atmosphere (atm)		
kilogram per square centimetre	= .98 bar (0.9869 atm)		
cubic metre per second (m ³ /s)	= 35.3 cubic feet per second (ft ³ /s)		

PRELIMINARY STEAM TABLES FOR NaCl SOLUTIONS

THERMODYNAMIC PROPERTIES OF THE COEXISTING PHASES AND THERMOCHEMICAL PROPERTIES OF THE NaCl COMPONENT IN BOILING NaCl SOLUTIONS

By JOHN L. HAAS, JR.

ABSTRACT

Preliminary steam tables that give the thermodynamic data for the coexisting liquid and gas and that give the thermochemical data for the NaCl component in the liquid for the system H_2O -NaCl are given for liquid concentrations between 0 mol NaCl/kg H_2O and halite saturation at temperatures between 80° and 325° C. The tables were calculated from parametric equation of state.

INTRODUCTION

The tables assembled present the thermochemical properties of aqueous NaCl in the vapor-saturated liquid phase and the thermodynamic properties of the coexisting liquid and gas phases for the H_2O -NaCl system as follows:

- partial molal volume of NaCl in the liquid,
- partial molal entropy of NaCl in the liquid,
- partial molal enthalpy of NaCl in the liquid,
- molal volume of the liquid,
- molal entropy of the liquid,
- difference between the molal entropy of the liquid and the
molal entropy of the gas,
- molal entropy of the gas,
- molal enthalpy of the liquid,
- difference between the molal enthalpy of the liquid and the
molal enthalpy of the gas,
- molal enthalpy of the gas.

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The data are tabulated for liquid compositions from 0 mol NaCl/kg H₂O to halite saturation at temperatures from 80° to 325° C. As an aid in using the tables, the vapor pressure and the density of the liquid are also given. These tables complement the steam tables prepared by Haas (1976) in which the physical properties of the solutions and the thermochemical data for H₂O are tabulated.

The tables presented here are preliminary. The functions upon which they are based represent a reasonably complete analysis of the available data through 1971. Improvement can be made when measurements and analysis are completed on the volumetric properties of vapor-saturated and vapor-absent liquid at high temperatures and at concentrations of more than 30 wt percent NaCl. Because there is an immediate need for the contained data, they have been made available in this preliminary form.

The tables are given as an aid in geochemical and engineering studies related to the geothermal energy program of the United States. Support for this work has come exclusively from the U.S. Geological Survey's geothermal research program.

UNITS, SYMBOLS, AND CONSTANTS

UNITS AND SYMBOLS IN TABLES AND TEXT

The chosen units in the tables for temperature, pressure, and density are °C, bars, and g cm⁻³, respectively. These are the same as those used in several widely referenced steam tables (Bain, 1964; Keenan and others, 1969). The partial molal and the molal entropy, enthalpy, and volume are given as J mol⁻¹K⁻¹, J mol⁻¹, and cm³ mol⁻¹, respectively, because these units are most used in thermodynamic calculations. Both weight percent and molal (mol NaCl/kg H₂O) scales for units of sodium chloride concentration are widely used in engineering and geochemical research. Both scales are used here to achieve the maximum use of the tables.

The quantities, their symbols, and the associated units used in this text and in the tables are as follows:

<i>Quantity</i>	<i>Symbol</i>	<i>Units</i>
activity	<i>a</i>	
fitted parameter in the activity coefficient function (eq 12)	<i>B</i>	kg H ₂ O/mol NaCl
fitted parameter in the activity coefficient function (eq 12)	<i>C</i>	(kg H ₂ O/mol NaCl) ²
heat capacity at constant pressure	<i>C_p</i>	J mol ⁻¹ K ⁻¹
density	<i>d</i>	g cm ⁻³
dielectric constant for pure H ₂ O	<i>D</i>	
molal free energy	<i>G</i>	J mol ⁻¹

<i>Quantity</i>	<i>Symbol</i>	<i>Units</i>
molal enthalpy	H	J mol ⁻¹
equilibrium constant	K	
mole fraction of NaCl	N	mol NaCl/(mol NaCl+mol H ₂ O)
pressure	p	bars
generalized thermodynamic quantity	Q	
molar gas constant	R	J mol ⁻¹ K ⁻¹
temperature	t	degrees Celsius, °C
	T	kelvins, K
molal volume	V	cm ³ mol ⁻¹
molecular weight	W	g mol ⁻¹
concentration of NaCl in the liquid	x	mol NaCl/kg H ₂ O (molal)
Debye-Hückel limiting slope	a	(kg H ₂ O/mol NaCl) ^{1/2}
fitted parameter in activity coefficient function (eq 12)	β	(kg H ₂ O/mol NaCl) ^{1/2}
activity coefficient	γ	kg H ₂ O/mol NaCl
number of moles of ions per mole of NaCl in solution	ν	moles Na ⁺ + moles Cl ⁻ per mole dissolved NaCl

In the text and the tables, the following superscripts are used:

<i>Superscript symbol</i>	<i>Connotation</i>
G	The superscripted quantity is an attribute of the gaseous phase.
L	The superscripted quantity is an attribute of the liquid phase.
-(bar)	The overscored quantity is a partial molal quantity of the component indicated by the subscript, in the solution.
0	The superscripted quantity is an attribute of the chemical species in the standard state.
Φ	The symbol is a generalized symbol representing the superscripts G and L above.

In the text and the tables, the following subscripts are used:

<i>Subscript symbol</i>	<i>Connotation</i>
1	The subscripted quantity is a partial quantity for the component H ₂ O.
2	The subscripted quantity is a partial quantity for the component NaCl.
0	The subscripted quantity is an attribute of the pure substance H ₂ O.
f	The subscripted quantity is a measure of the difference in the thermochemical property between the compound in its standard state and its component elements in their standard states.

FUNDAMENTAL CONSTANTS USED IN CALCULATIONS

The Committee on Data for Science and Technology (1973b) of the International Council of Scientific Unions gives the molar gas constant R as (8.31441 ± 0.00026) J mol⁻¹K⁻¹.

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The Commission on Atomic Weights (1972) gives the following atomic weights:

H	$(1.0079 \pm 0.0001) \text{ g mol}^{-1}$
O	$(15.9994 \pm 0.0003) \text{ g mol}^{-1}$
Na	$(22.98977 \pm 0.00001) \text{ g mol}^{-1}$
Cl	$(35.453 \pm 0.001) \text{ g mol}^{-1}$

From these atomic weights the molecular weights of the components are:

H_2O	$W_1 = (18.0152 \pm 0.0005) \text{ g mol}^{-1}$
NaCl	$W_2 = (58.4428 \pm 0.0010) \text{ g mol}^{-1}$

EMPIRICAL CONSTANTS USED IN THE TEXT AND CALCULATIONS

The following list gives the constants for the equations presented in the text. The equation numbers and constants are as follows:

Equation 9:

$$\begin{aligned} g_0 &= 1.895555 \times 10^3 \\ g_1 &= -1.944135 \\ g_2 &= -7.343150 \times 10^7 \\ g_3 &= -9.938067 \times 10^3 \end{aligned}$$

Equation 16:

$$\begin{aligned} B_0 &= 4.43570 \times 10^{-2} \\ B_1 &= 2.14240 \times 10^{-4} \\ B_2 &= -1.21582 \times 10^{-6} \end{aligned}$$

Equation 17:

$$\begin{aligned} C_0 &= 4.86989 \times 10^{-3} \\ C_1 &= -6.65184 \times 10^{-5} \\ C_2 &= 1.69534 \times 10^{-7} \end{aligned}$$

Equation 18:

For temperatures at and below 100°C the constants are the following:

$$\begin{aligned} \beta_0 &= 0.980075 \\ \beta_1 &= 0.707654 \times 10^{-2} \\ \beta_2 &= -2.97433 \times 10^{-5} \end{aligned}$$

For temperatures above 100°C the constants are the following:

$$\begin{aligned} \beta_0 &= 1.64801 \\ \beta_1 &= -2.83246 \times 10^{-3} \\ \beta_2 &= 4.67896 \times 10^{-6} \end{aligned}$$

VAPOR PRESSURE AND DENSITY OF THE VAPOR-SATURATED LIQUID PHASE

The functions for the vapor pressure and density were given in Haas, 1976. They are not repeated here because there has been no change.

THERMOCHEMICAL DATA FOR NaCl IN THE VAPOR-SATURATED LIQUID PHASE

SYNOPSIS OF THE THEORETICAL APPROACH

An attribute of steam tables is that differences in the energy content between two states of matter can be calculated by simple subtraction of the data in the tables. The ease in calculation results from all values in the tables being given as the energy difference between the state of the compound at temperature and pressure and the reference temperature and reference pressure. For H_2O in the $\text{NaCl-H}_2\text{O}$ system such values were comparatively easy to derive because the thermodynamics for the pure component H_2O had been established (Bain, 1964; Keenan and others, 1969). It only remained to determine the appropriate departure that dissolved NaCl would cause relative to the pure H_2O system.

For the NaCl component, no approach has been established. First, a reference state must be chosen. In this set of tables, the chosen reference state is the hypothetical ideal NaCl solution of unit molality at the ice—liquid—vapor triple point for pure H_2O .

With the reference state established, calculation of energy differences between any arbitrary temperature, pressure, and composition and the chosen reference state can be made. The approach used here is as follows:

1. The partial molal volume of NaCl was obtained from a density—temperature—composition function for the vapor-saturated NaCl liquid phase.
2. The partial molal free energy of NaCl in the hypothetical ideal 1-molal liquid as a function of temperature and pressure was obtained.
3. The dependence of the partial molal free energy of NaCl with composition at constant temperature and pressure was obtained.
4. The dependence of the partial molal free energy of NaCl with pressure at constant temperature and composition was obtained.

5. Then, using the relation

$$\bar{S}_2^L = -\frac{\partial \bar{G}_2^L}{\partial T} + \bar{V}_2^L \frac{\partial p}{\partial T} \quad (1)$$

the partial molal entropy at temperature, pressure, and composition was calculated.

6. The partial molal enthalpy of NaCl at temperature, pressure, and composition was obtained from

$$\bar{H}_2^L = \bar{G}_2^L + T \bar{S}_2^L \quad (2)$$

Each of these steps is described in further detail in the following sections.

PARTIAL MOLAL VOLUME OF NaCl IN THE LIQUID

The partial molal volume of NaCl in the binary liquid system is given by equation 3.

$$\bar{V}_2^L = V^L + (1 - N^L) \frac{\partial V^L}{\partial N^L} \quad (\text{cm}^3 \text{ mol}^{-1}) \quad (3)$$

where V^L is the volume of the liquid containing a total of one mole of molecules. The term N^L is the mole fraction of NaCl in the liquid phase and is given by equation 4 in terms of x , the molality of the solution.

$$N^L = \frac{x}{1000/W_1 + x} \quad (4)$$

W_1 is the molecular weight of H_2O . The molal volume V^L of an x molal liquid of density d is given by equation 5.

$$V^L = \frac{1}{d} \frac{1000 + xW_2}{1000/W_1 + x} \quad (\text{cm}^3 \text{ mol}^{-1}) \quad (5)$$

The partial molal volume of NaCl, \bar{V}_2^L , was obtained by using equations 3 through 5, given here, the equations for density of the liquid phase in the preceding report (Haas, 1976, equations 7 through 10), and standard analytical techniques.

Figure 1 shows the partial molal volume of NaCl in the liquid at constant composition. The contour interval is 5 wt percent NaCl.

THE PARTIAL MOLAL FREE ENERGY OF NaCl IN THE LIQUID

Figure 2 shows graphically the route which was taken through temperature-pressure-composition space to obtain the partial molal free energy at an arbitrary temperature, pressure, and composition (point *D*) from the reference state at 0.01°C (point *A*).

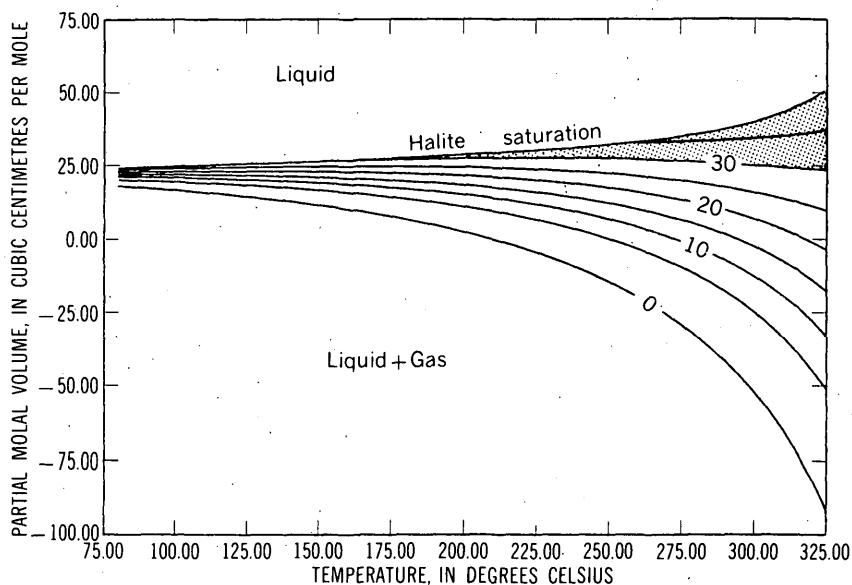


FIGURE 1.—The partial molal volume of NaCl in the liquid phase for vapor-saturated NaCl solutions from 0 wt percent to halite saturation between 80° and 325° C. The contour interval is 5 wt percent NaCl. The stippled zone was calculated by the extrapolation of the functions given in the text.

Steps 2, 3, and 4 in the synopsis above correspond to the segments AB, BC, and CD on the figure.

Step 2 of the approach, given in the section entitled "Synopsis of the theoretical approach," involved the derivation of a partial

molal free energy function for aqueous NaCl, $\Delta \bar{G}_2^L(AB)$, in the hypothetical ideal liquid solution of unit molality, that is, in the solute *standard state*, relative to the *reference-state* partial molal

free energy at the triple point where \bar{G}_2^L is defined to be 0.0 J mol⁻¹.¹ To accomplish this, consider here the interrelations between free energy, temperature, pressure, entropy, enthalpy, heat capacity, and partial molal volume. By using equations 1 and 2 and the relation between enthalpy and heat capacity, equations 6 through 8 were derived.

¹ As used in this report, the *reference* state for a chemical species is an arbitrarily chosen single point on the temperature, pressure, and composition scales which is taken as the zero point for the energy scale. That is the thermochemical parameters of free energy, enthalpy, and entropy are defined to be zero at this point. In contrast, as used here (and also as in many applications in aqueous chemistry), the *standard* state for a dissolved compound in H₂O is taken as the hypothetical ideal liquid solution of unit molality at the temperature and pressure of the vapor-saturated pure H₂O liquid. In this *standard* state, the partial molal free energy, enthalpy, and heat capacity of the dissolved compound is the same as that for the infinitely dilute real solution. The advantage of a standard state in aqueous chemistry is that it allows correlations of properties as a function of composition at constant temperature and pressure, whereas a *reference* state is necessary when correlations or calculations in temperature-pressure-composition space are being made.

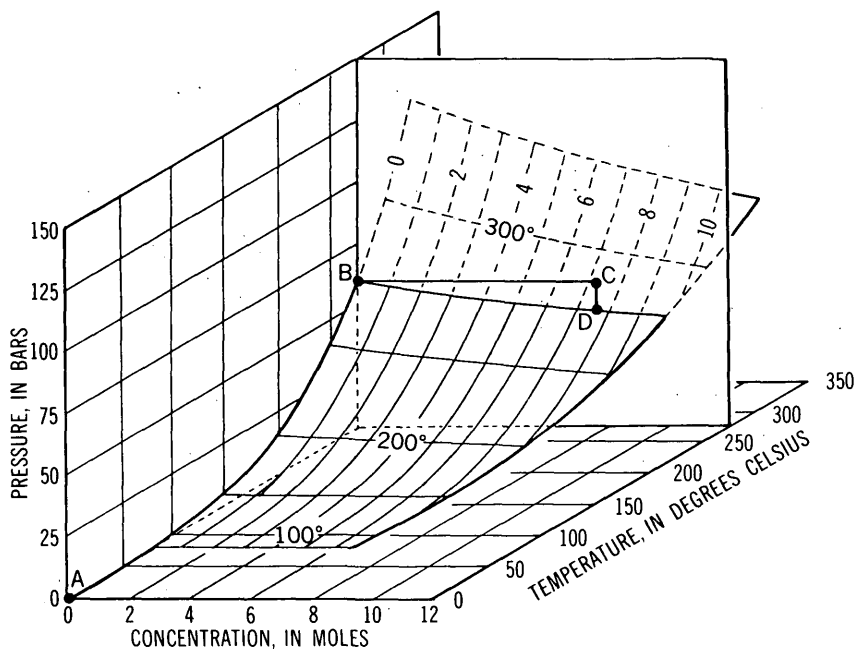


FIGURE 2.—Temperature—pressure—concentration diagram for the vapor-liquid coexistence surface of the H_2O — NaCl system between 80° and 325° C. The surface is contoured both in temperature (50° intervals) and concentration (1-molal intervals). The concentration contours are truncated by the focus of the three-phase coexistence liquid—vapor—halite at high concentrations. The blank vertical plane between 250° and 300° C represents an arbitrary isotherm upon which lie the points B, C, and D and the heavy solid lines connecting them. Steps 2, 3, and 4 of the chosen approach represent the temperature—pressure—composition paths AB, BC, and CD, respectively, along which partial molal free energy functions were sought. The combination of these functions then gives the partial molal free energy of NaCl at the arbitrary point D relative to the reference state at A, the triple point of pure H_2O .

$$\bar{S}_2 - \bar{V}_2 \frac{\partial p}{\partial T} = - \frac{\partial \bar{G}_2}{\partial T} \quad (6)$$

$$\bar{H}_2 - T \bar{V}_2 \frac{\partial p}{\partial T} = \bar{G}_2 - T \frac{\partial \bar{G}_2}{\partial T} \quad (7)$$

$$\bar{C}_{p,2} - T \bar{V}_2 \frac{\partial^2 p}{\partial T^2} - T \frac{\partial \bar{V}_2}{\partial T} \frac{\partial p}{\partial T} - \bar{V}_2 \frac{\partial p}{\partial T} = - T \frac{\partial^2 \bar{G}_2}{\partial T^2} \quad (8)$$

Internal consistency demands that any free-energy function must satisfy the above relations and the available data for the hypothetical ideal 1-molal solution. The available data were

evaluated, subject to the above constraints, by use of a computerized algorithm described by Haas and Fisher (1976).

The data used in the evaluation are as follows. For the partial molal volume of dissolved NaCl, the function given in the previous section was used. Data for the relations between halite and dissolved NaCl and for dissolved NaCl, all in their standard states, were taken from the following references:

Reference	Data type	Number of observations	Temperature range (°C)
Committee on Data for Science and Technology (1973a).	S_2^0 (298.15K)	1	25
	ΔG_2^0 , τ (298.15K)	1	25
Likke and Bromley (1973) --	$C_{p,2}^0$	7	80-200
Criss and Cobble (1961) ----	$\Delta H^0[\text{halite}=\text{NaCl(aq)}]$	13	0-95
Gardner and others (1969) --	$\Delta H^0[\text{halite}=\text{NaCl(aq)}]$	3	114-200
Liu and Lindsay (1972) ----	$\log K^0[\text{halite}=\text{NaCl(aq)}]$	10	75-300
Stull and Prophet (1971) ---	$C_p^0, S^0, (H_T-H_{298})$ [halite]	Tabulated data, 100° intervals, 25-727.	

The partial molal free energy of the hypothetical ideal 1-molal solution as a function of temperature is given by equation 9; the constants are tabulated in the section entitled "Empirical constants used in the text and the calculations."

$$\begin{aligned} \Delta \bar{G}_2^L(AB) = & g_0(T - T \ln T - 273.16 + 273.16 \ln 273.16) \\ & - g_1(T^2 - 273.16^2) \\ & - g_2(1/2T - 1/2 \times 273.16) \\ & - g_3(T - 273.16) \quad (\text{J mol}^{-1}) \end{aligned} \quad (9)$$

The procedure of Haas and Fisher (1976) uses 25° C (298.15K) as the reference temperature. Therefore, the free-energy function has been corrected to reflect the shift in the reference temperature to 0.01° C (273.16K) for use here.

Step 3 of the chosen approach for deriving the thermochemical functions requires the description of the change in the free energy with concentration, $\Delta \bar{G}_2^L(BC)$, at constant temperature and pressure. This dependence is given by equations 10 and 11.

$$\Delta \bar{G}_2^L(BC) = R T \ln a_2 \quad (10)$$

$$= \nu R T [\ln x \times \ln \gamma] \quad (11)$$

where R is the molar gas constant and a_2 and γ are the activity and activity coefficient, respectively, for the dissolved NaCl at point C relative to the standard state, the hypothetical ideal 1-

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molal solution, point *B*. Liu and Lindsay (1972) gave the following equations for the temperature and concentration dependence of $\ln \gamma$ at the vapor-saturation pressure for pure H_2O .

$$\ln \gamma = \frac{-\alpha x^{1/2}}{(1 + \beta x^{1/2})} + 2Bx + \frac{3}{2}Cx^2 \quad (12)$$

B, *C*, and β are second-order polynomials in temperature and α is the Debye-Hückel limiting slope:

$$\alpha = 1.17202 \, d_0^{1/2} \left[\frac{2.33752 \cdot 10^4}{DT} \right]^{3/2} \quad (13)$$

The term d_0 is the density of pure H_2O and, for use in this calculation, d_0 is described by:

$$d_0 = 1.00157 - 1.56096 \cdot 10^{-4}t - 2.69491 \cdot 10^{-6}t^2 \quad (\text{g cm}^{-3}) \quad (14)$$

The term *D* is the dielectric constant for pure H_2O as given by the Åkerlöf equation:

$$D = \frac{5321.}{T} + 233.76 - 0.9297 \, T + 1.417 \cdot 10^{-3}T^2 - 8.292 \cdot 10^{-7}T^3 \quad (15)$$

The functions for *B*, *C*, and β are, respectively,

$$B = B_0 + B_1t + B_2t^2 \quad (16)$$

$$C = C_0 + C_1t + C_2t^2 \quad (17)$$

$$\beta = \beta_0 + \beta_1t + \beta_2t^2 \quad (18)$$

The constants B_i , C_i , and β_i are given in the section entitled "Empirical constants used in the text and calculations."

Step 4 of the chosen approach for deriving the thermochemical functions requires the description of the change in the partial

molal free energy with pressure, $\Delta \bar{G}_2^L(CD)$, at constant temperature and composition. Basic thermodynamic principles state that the pressure dependence of free energy is:

$$\partial \bar{G} = \bar{V} \partial p \quad (19)$$

Therefore,

$$\Delta \bar{G}_2^L(CD) = \int_{p_0}^p \bar{V}_2^L dp \quad (20)$$

where p_0 and p are the vapor pressures of H_2O and of the liquid solution, respectively. The dependence of the partial molal volume of dissolved NaCl with pressure in the vapor-absent liquid is unavailable, but the change in \bar{V}_2^L with pressure is small relative to

the total magnitude of this correction. Therefore, by neglecting the pressure dependence of \bar{V}_2^L , equation 20 can be approximated by

$$\Delta\bar{G}_2^L(CD) = \bar{V}_2^L(p_0 - p) \quad (21)$$

In summary, the partial molal free energy of aqueous NaCl at an arbitrary temperature, pressure, and composition relative to the reference state at 0.01°C is given by summing equations 9, 11, and 21.

$$\bar{G}_2^L = \Delta\bar{G}_2^L(AB) + \Delta\bar{G}_2^L(BC) + \Delta\bar{G}_2^L(CD) \quad (\text{J mol}^{-1}) \quad (22)$$

Figure 3 shows the partial molal free energy of NaCl in the liquid at constant composition. The contour interval is 5 wt percent NaCl.

THE PARTIAL MOLAL ENTROPY OF NaCl IN THE LIQUID

The partial molal entropy at an arbitrary temperature, pressure, and composition was calculated using equation 1:

$$\bar{S}_2^L = -\frac{\partial\bar{G}_2^L}{\partial T} + \bar{V}_2^L \frac{\partial p}{\partial T} \quad (1)$$

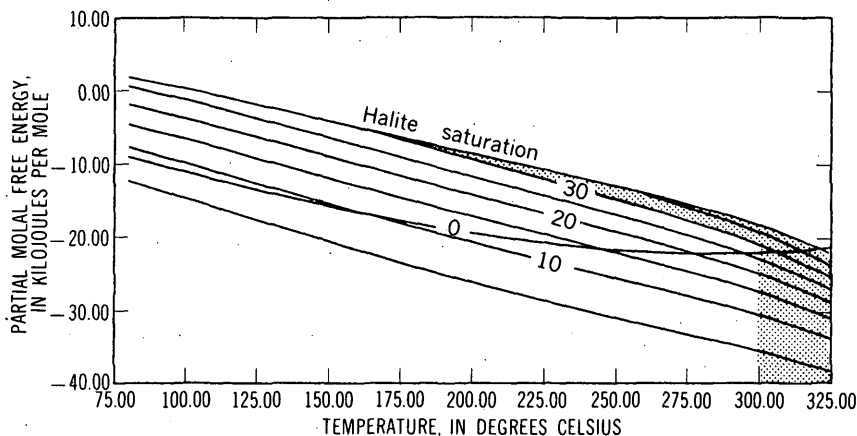


FIGURE 3.—The partial molal free energy of NaCl in the liquid phase of vapor-saturated NaCl solutions from 0 wt percent to halite saturation between 80° and 325° C. The contour interval is 5 wt percent NaCl. All contours between 5 wt percent and halite saturation are systematic. Below the 5 wt percent contour, there is a reversal in the free-energy function so that the partial molal free energy of aqueous NaCl at infinite dilution lies above the partial molal free energies of NaCl at greater concentrations. For details, one is referred to the tables. The shaded zone at concentrations greater than 30 wt percent and at temperatures greater than 300° C contains data that were calculated by the extrapolation of the functions given in the text.

The term $\partial \bar{G}_2^L / \partial T$ was obtained, analytically, from equation 22 above; the term \bar{V}_2^L was obtained from equation 3; and the term $\partial p / \partial T$ was calculated in the manner described in the section entitled "Enthalpy difference between the gas and the liquid at constant liquid composition," of the preceding report (Haas, 1976).

Figure 4 shows the partial molal entropy of NaCl in the liquid phase at constant composition. The contour interval is 5 wt percent NaCl.

The surface depicted on figure 4 is complicated as can be seen by the crossover of the concentration contours as temperature decreases. For details, the reader is referred to the appropriate tables. The erratic behavior of the contours near 110° C is due to the use of two sets of constants to fit the empirical term β in the activity coefficient equation (eq 12). This will be discussed further in the section "Recommendations for research."

THE PARTIAL MOLAL ENTHALPY OF NaCl IN THE LIQUID

The partial molal enthalpy of NaCl was calculated from equation 2 using the previously computed entropy and free energy:

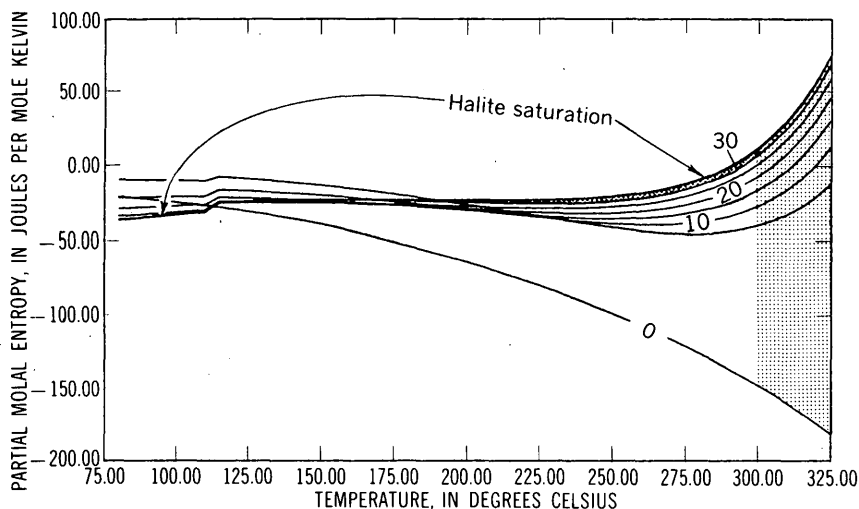


FIGURE 4.—The partial molal entropy of NaCl in the liquid for vapor-saturated NaCl solutions from 0 wt percent to halite saturation between 80° and 325° C. The contour interval is 5 wt percent NaCl. The inflection near 110° C is due to the use of two sets of constants to describe the fitted constant β in the activity coefficient equation. The surface is complex. Most of the change in the partial molal entropy with change in composition occurs between 0 and 5 wt percent. For details, the reader is referred to the tables.

$$\bar{H}_2^L = \bar{G}_2^L + T \bar{S}_2^L \quad (2)$$

Figure 5 shows the partial molal enthalpy of NaCl in the liquid phase at constant composition. The contour interval is 5 wt percent NaCl. The erratic behavior in the contours near 110°C are due to the use of two sets of constants to fit the empirical term β in the activity coefficient equation (eq 12). This will be discussed further in the section "Recommendations for research."

PARTIAL MOLAL THERMOCHEMICAL PROPERTIES OF NaCl IN THE GAS PHASE

The available experimental data for the concentration of NaCl in the gas phase do not permit the estimation of the partial molal quantities of NaCl in the gas phase.

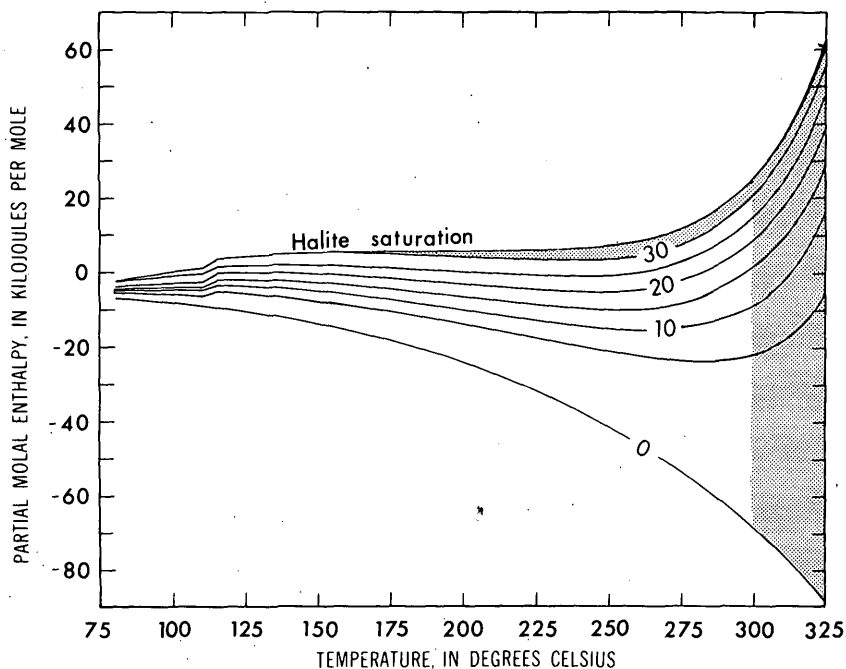


FIGURE 5.—The partial molal enthalpy of NaCl in the liquid for vapor-saturated NaCl solutions from 0 wt percent to halite saturation between 80° and 325° C. The contour interval is 5 wt percent NaCl. The inflection near 110° C is due to the use of two sets of constants to describe the fitted constant β in the activity coefficient equation. The shaded area contains data that were calculated by the extrapolation of the functions given in the text.

THERMODYNAMIC DATA FOR THE PHASES IN THE H₂O-NaCl SYSTEM

The molal properties of the liquid and gas phases in the H₂O-NaCl system can be calculated readily from the thermochemical data for NaCl that were formulated here, and for H₂O that were given in the preceding report (Haas, 1976). The formulation is identical for all molal quantities:

$$Q = (1 - N^\Phi) Q_1^\Phi + N^\Phi Q_2^\Phi \quad (23)$$

where Q is the quantity of interest (volume, entropy, enthalpy) and N^Φ is the mole fraction of NaCl in phase Φ . In the liquid phase, the mole fraction of NaCl was calculated from the concentration by using equation 4. In the gas phase, the available data

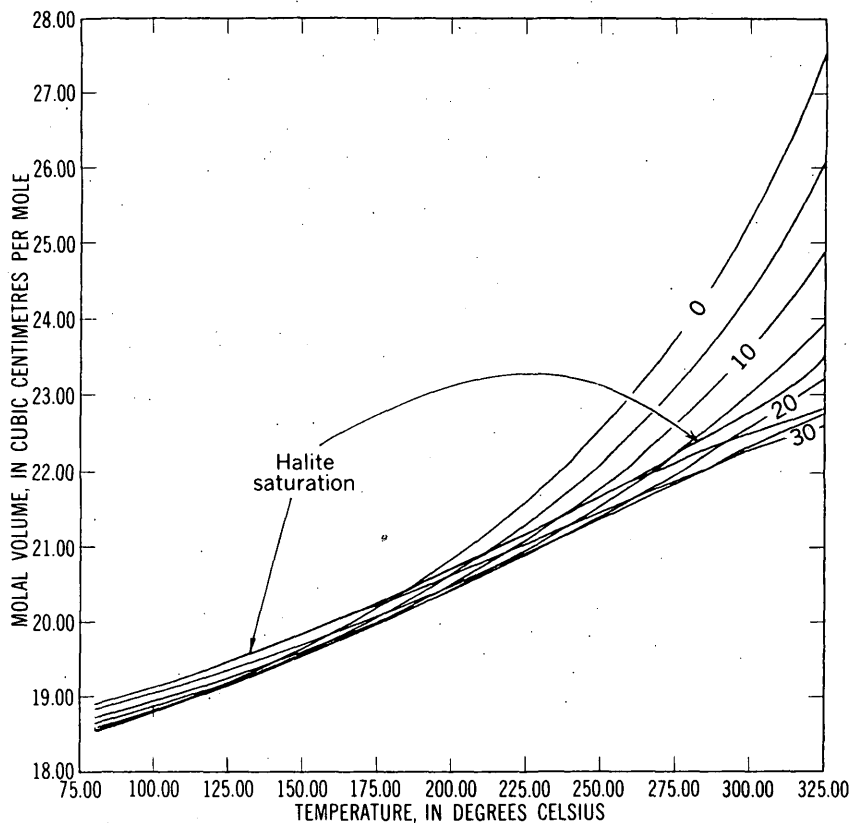


FIGURE 6.—The molal volume of liquid solutions in the H₂O-NaCl system from 0 wt percent NaCl to halite saturation between 80° and 325° C. The contour interval is 5 wt percent NaCl. As is obvious from the crossing of contours, the surface is complex. For details, the reader is referred to the tables.

do not permit the estimation of the mole fraction of NaCl with any precision. However, the mole fraction of NaCl in the gas is small, being less than or equal to 10^{-6} in most of the temperature—pressure—composition space covered in this report. Therefore, the quantity $N^g Q_2^g$ was neglected, and the thermodynamic properties of the gas were assumed to be the same as the thermochemical properties of pure H_2O at the temperature and pressure of the solution.

Figure 6 shows the molal volume of the liquid phase. The contour interval is 5 wt percent NaCl.

Figures 7 and 8 show the molar entropy and the gas at composition of NaCl in the liquid. The contour interval is 5 wt percent NaCl contained in the liquid phase.

RECOMMENDATIONS FOR RESEARCH

In the preparation of these preliminary steam tables, several areas where one can improve the precision and accuracy were

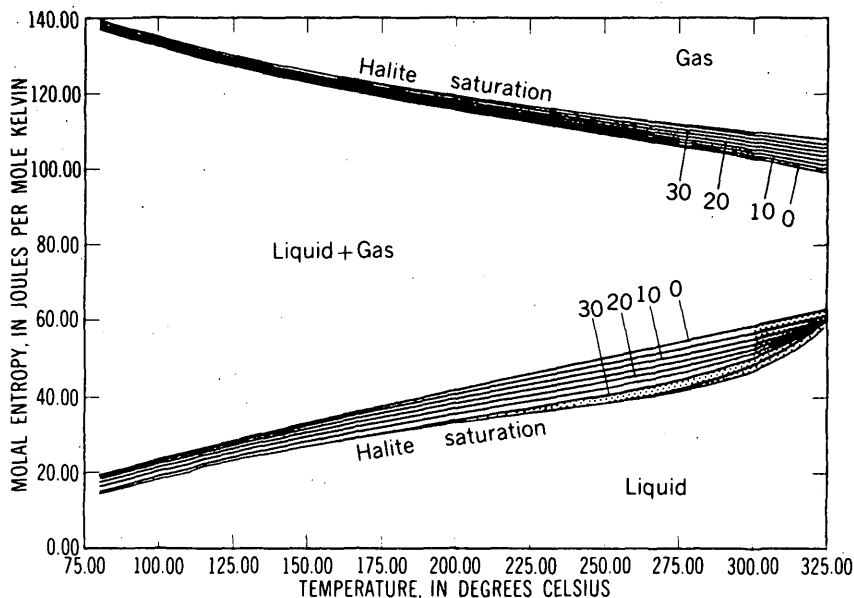


FIGURE 7.—The molal entropy of the gas and the liquid phases in the H_2O -NaCl system from 0 wt percent NaCl to halite saturation in the liquid phase between 80° and 325° C. The contour interval is 5 wt percent NaCl in the liquid. The shaded area contains data that were calculated by the extrapolation of functions given in the text. The bunching of the contours between 300° and 325° C is most probably due to an artifact in the equations which is exaggerated when the partial molal entropy of aqueous NaCl is calculated.

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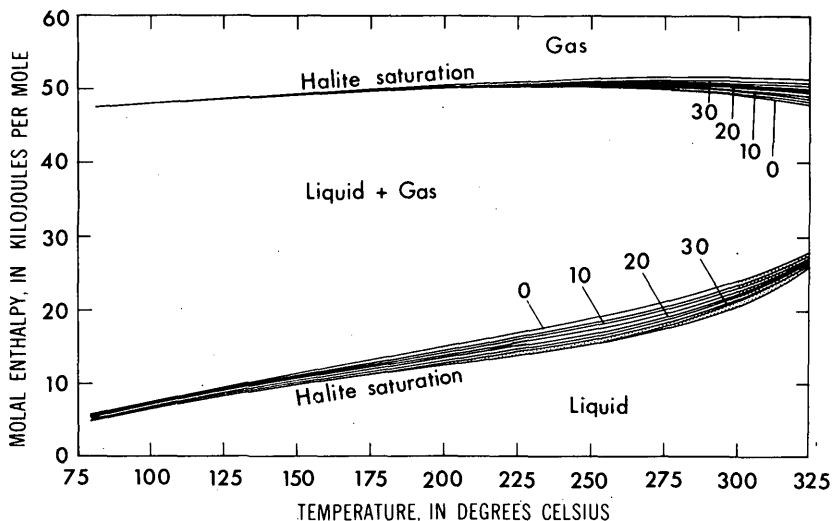


FIGURE 8.—The molal enthalpy of the gas and the liquid phases in the H_2O - NaCl system from 0 wt percent to halite saturation in the liquid phase between 80° and 325° C. The contour interval is 5 wt percent NaCl in the liquid phase. The shaded area contains data that were calculated by the extrapolation of functions given in the text. The bunching of the contours between 300° and 325° C is most probably due to an artifact in the equations which is exaggerated when the partial molal enthalpy of aqueous NaCl is calculated.

noted. The most obvious place for improvement is the description of $\ln \gamma$, the activity coefficient for aqueous NaCl . Use of several equations to describe β in the activity coefficient function (eq 12) is acceptable as long as the derivative is not needed. However, this was not the situation in these steam tables where entropy is calculated from equation 1:

$$\bar{S}_2^L = -\frac{\partial \bar{G}_2^L}{\partial T} + \bar{V}_2^L \frac{\partial p}{\partial T} \quad (1)$$

The term $\partial \bar{G}_2^L / \partial T$ was obtained from equation 22 as follows:

$$\frac{\partial \bar{G}_2^L}{\partial T} = \frac{\partial}{\partial T} \Delta \bar{G}_2^L (AB) + \frac{\partial}{\partial T} \Delta \bar{G}_2^L (BC) + \frac{\partial}{\partial T} \Delta \bar{G}_2^L (CD) \quad (24)$$

The taking of the partial derivative for the first term is thermodynamically sound, because $\Delta \bar{G}_2^L (AB)$ was evaluated using equilibrium constants, entropies, heats of solution, heat capacities, and partial molal volumes. Whereas the function is empirical, the function and its partial derivatives are consistent with thermodynamic theory.

Not so for the second term $\partial \Delta \bar{G}_2^L (BC) / \partial T$. When Liu and Lindsay (1972) evaluated the osmotic coefficient and activity coefficient data, no constraints were imposed except that the Debye-Hückel limiting slope be obeyed. An improved evaluation of $\ln \gamma$ using the available heats of solution of halite and the heat capacities of aqueous NaCl would eliminate the obvious discordance in the data at about 110°C as shown on figures 4 and 5.

The other problem is the density and therefore the partial molal volumes of H₂O and NaCl. The available experimental data for the H₂O—NaCl system at temperatures above 100°C are poor. Apart from imprecise experimental methods, most experimental techniques involved the use of equipment that was corroded by the brine. The reported densities included the effects of dissolved H₂ and metal ions. Improvement in this area entails the remeasurement of densities in the H₂O—NaCl system with an experimental design that is both highly accurate and free from corrosion.

TABLES FOR NaCl SOLUTIONS

Tables 1 through 28 give the temperature, pressure, and the density of the liquid at constant composition and 5° intervals between 80° C (or at the 5° interval just above halite saturation) and 325° C. The partial molal quantities of volume, entropy, and enthalpy for NaCl in the liquid are given. The third part of the tables gives the molar volume of the liquid and the molar entropy and molar enthalpy of the liquid and the gas that coexists with the liquid.

Tables 3, 6, 10, 13, 17, 21, and 26 give data at 5, 10, 15, 20, 25, 30, and 35 wt percent NaCl, respectively. The other tables give the data at intervals of 0.5 mol NaCl/kg H₂O (molal).

Tables 29 and 30 give the same data but at the given concentration on the halite saturation equilibrium between 80° and 325° C. Table 29 is in concentration units of wt percent NaCl and table 30 is mol NaCl/kg H₂O.

The tables were calculated by using the functions that are given in the preceding section. The data contained in parentheses were calculated by extrapolation of the functions beyond their range.

A detailed analysis of the accuracy and precision of the tabulated data is not possible in this preliminary report. Haas (1976) discussed the accuracy of the vapor pressure, density, and volume data for the liquid and the gas and of the partial molal quantities for H₂O (\bar{H} , \bar{S} , and \bar{V}) in the liquid and the gas. In preparing this report, the following additional equations have been used:

Equation	Property	Source
(9)	$\Delta\bar{G}_2(AB)$	This report.
(12)	$\ln \gamma$	Liu and Lindsay (1972)

Assuming that the JANAF data for halite ($\text{NaCl}[c]$) are without error (?), the maximum error in $\Delta\bar{G}_2^0(AB)$ is 200 J mol^{-1} . For the activity coefficient equation, Liu and Lindsay (1972) gave no estimate of either the accuracy or precision. However, an analysis of the graphical data which they supplied indicates that the maximum error in the activity coefficients is less than 0.003.

Even having this information, an estimate of the error in the partial molal quantities for NaCl in the liquid (\bar{V}_2^L , \bar{H}_2^L , and \bar{S}_2^L) cannot be made because these properties were calculated in part by the partial differentiation of equations 9 and 12, above, as well as other equations cited by Haas (1976).

In the tables, data are given that have as many as six digits. This is particularly true for data for entropy and enthalpy where most of the value represents the relative difference in the property between T and 0.01°C and only a minor part of the value is due to change in concentration. The number of digits reported in the tables is governed by the need to have a reasonable resolution in the property when small changes in concentration or temperature are considered.

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TABLES 1-30

Table 1. NaCl concentration:

Table 1. NaCl concentration:										0.00 wt percent			0.000 mol/kg H ₂ O			0.000 mol percent		
t (°C)	p (bars)	d ^L (g cm ⁻³)	\bar{v}_a^L (cm ³ mol ⁻¹)	\bar{S}_a^L (J mol ⁻¹ K ⁻¹)	\bar{H}_a^L (J mol ⁻¹)	V ^L (cm ³ mol ⁻¹)	S ^L	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L	ΔH (J mol ⁻¹)	H ^G						
80.	0.474	0.972	17.91	-21.806	-6650.	18.54	19.296	117.814	137.110	6017.	41606.	47624.						
85.	0.578	0.969	17.61	-22.754	-6987.	18.60	20.356	115.534	135.890	6395.	41773.	47773.						
90.	0.701	0.965	17.29	-23.737	-7342.	18.66	21.405	113.307	134.712	6773.	41148.	47921.						
95.	0.845	0.962	16.94	-24.762	-7716.	18.73	22.443	111.131	133.574	7153.	40913.	48066.						
100.	1.013	0.958	16.58	-25.836	-8114.	18.80	23.469	109.006	132.475	7533.	40676.	48209.						
105.	1.208	0.955	16.19	-26.966	-8538.	18.87	24.480	106.931	131.411	7914.	40436.	48349.						
110.	1.433	0.951	15.78	-28.137	-8991.	18.94	25.479	104.901	130.381	8294.	40193.	48487.						
115.	1.691	0.947	15.34	-29.416	-9476.	19.02	26.467	102.915	129.382	8676.	39947.	48622.						
120.	1.985	0.943	14.87	-30.745	-9995.	19.10	27.444	100.971	128.414	9058.	39697.	48754.						
125.	2.321	0.939	14.38	-32.151	-10551.	19.19	28.409	99.065	127.474	9441.	39443.	48883.						
130.	2.701	0.935	13.86	-33.630	-11155.	19.27	29.365	97.196	126.561	9824.	39185.	49003.						
135.	3.131	0.931	13.31	-35.204	-11781.	19.36	30.311	95.362	125.674	10209.	38922.	49131.						
140.	3.614	0.926	12.72	-36.859	-12460.	19.45	31.248	93.561	124.809	10595.	38655.	49249.						
145.	4.155	0.922	12.11	-38.602	-13184.	19.55	32.177	91.791	123.967	10982.	38382.	49364.						
150.	4.760	0.917	11.45	-40.438	-13955.	19.65	33.097	90.049	123.146	11370.	38104.	49474.						
155.	5.433	0.912	10.76	-42.367	-14776.	19.75	34.009	88.336	122.345	11759.	37821.	49580.						
160.	6.180	0.907	10.03	-44.392	-15647.	19.85	34.914	86.648	121.561	12150.	37531.	49682.						
165.	7.008	0.902	9.25	-46.516	-16572.	19.96	35.811	84.984	120.795	12543.	37246.	49779.						
170.	7.920	0.897	8.43	-48.739	-17550.	20.08	36.703	83.342	120.045	12938.	36953.	49871.						
175.	8.925	0.892	7.56	-51.064	-18586.	20.19	37.587	81.722	119.310	13334.	36654.	49958.						
180.	10.027	0.887	6.64	-53.482	-19679.	20.31	38.466	80.122	118.588	13732.	36357.	50040.						
185.	11.234	0.882	5.66	-56.024	-20832.	20.44	39.340	78.559	117.879	14133.	35983.	50116.						
190.	12.552	0.876	4.62	-58.662	-22047.	20.56	40.208	76.974	117.182	14536.	35651.	50186.						
195.	13.989	0.870	3.52	-61.408	-23325.	20.70	41.072	75.424	116.496	14941.	35310.	50250.						

200.	15.551	0.865	2.35	-64.262	-24668.	20.83	41.931	73.888	115.819	15348.	34960.	50309.
205.	17.245	0.859	1.10	-67.227	-26078.	20.98	42.786	72.366	115.152	15758.	34602.	50360.
210.	19.080	0.853	-0.22	-70.304	-27557.	21.13	43.637	70.854	114.492	16171.	34233.	50405.
215.	21.003	0.847	-1.64	-73.494	-29106.	21.28	44.485	69.354	113.839	16587.	33855.	50442.
220.	23.021	0.840	-3.14	-76.799	-30728.	21.44	45.330	67.862	113.192	17006.	33466.	50473.
225.	25.504	0.834	-4.75	-80.221	-32425.	21.60	46.172	66.378	112.550	17429.	33066.	50495.
230.	27.979	0.827	-6.47	-83.762	-34200.	21.78	47.011	64.900	111.911	17854.	32655.	50509.
235.	30.635	0.821	-8.32	-87.425	-36054.	21.95	47.848	63.428	111.276	18284.	32231.	50514.
240.	33.480	0.814	-10.29	-91.212	-37990.	22.14	48.684	61.959	110.643	18717.	31794.	50511.
245.	36.524	0.807	-12.42	-95.126	-40012.	22.34	49.518	60.492	110.011	19153.	31344.	50497.
250.	39.776	0.799	-14.70	-99.172	-42123.	22.54	50.352	59.027	109.378	19595.	30880.	50474.
255.	43.205	0.792	-17.16	-103.352	-44326.	22.75	51.184	57.560	108.744	20040.	30400.	50440.
260.	46.910	0.784	-19.83	-107.672	-46625.	22.98	52.016	56.092	108.108	20490.	29905.	50395.
265.	50.822	0.776	-22.71	-112.138	-49029.	23.21	52.849	54.620	107.469	20945.	29396.	50339.
270.	55.031	0.768	-25.84	-116.756	-51533.	23.46	53.682	53.142	106.834	21405.	28874.	50268.
275.	59.487	0.759	-29.24	-121.534	-54132.	23.72	54.516	51.658	106.194	21871.	28346.	50187.
280.	64.192	0.751	-32.96	-126.483	-56892.	24.00	55.352	50.165	105.516	22342.	27799.	50091.
285.	69.175	0.742	-37.03	-131.615	-59760.	24.29	56.189	48.661	104.851	22820.	27160.	49980.
290.	74.493	0.732	-41.51	-136.938	-62766.	24.60	57.030	47.145	104.175	23304.	26550.	49854.
295.	80.025	0.723	-46.46	-142.476	-65923.	24.93	57.874	45.615	103.488	23795.	25916.	49711.
300.	85.917	0.712	-51.95	-148.247	-69246.	25.28	58.722	44.067	102.790	24294.	25257.	49551.
305.	(92.136)	0.702	-58.07	(-154.278)	(-72752.)	25.67	(59.576)	(42.501)	(102.077)	(24801.)	(24572.)	(49373.)
310.	(98.597)	0.691	-64.93	(-160.601)	(-76464.)	26.08	(60.436)	(40.914)	(101.350)	(25318.)	(23859.)	(49177.)
315.	(105.612)	0.679	-72.69	(-167.260)	(-80411.)	26.52	(61.304)	(39.303)	(100.607)	(25844.)	(23116.)	(48960.)
320.	(112.899)	0.667	-81.53	(-174.307)	(-84630.)	27.01	(62.181)	(37.664)	(99.846)	(26382.)	(22341.)	(48723.)
325.	(120.571)	0.654	-91.68	(-181.816)	(-89169.)	27.54	(63.070)	(35.995)	(99.066)	(26932.)	(21531.)	(48463.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

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-ule 2. NaCl concentration: 0.5000 mol/kg H ₂ O											
t (°C)	P (bars)	d ^L (g cm ⁻³)	$\frac{\bar{V}^L}{g}$ (cm ³ mol ⁻¹)	$\frac{\bar{S}_a^L}{g}$ (J mol ⁻¹ K ⁻¹)	$\frac{\bar{H}_a^L}{g}$ (J mol ⁻¹)	2.84 wt percent			0.893 mol percent		
						V ^L (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)			
						S ^G			H ^L		
						(J mol ⁻¹)			ΔH		
									(J mol ⁻¹)		
									H ^G		
80.	0.465	0.991	19.60	-1.021	-5853.	18.54	19.232	118.028	5903.	41723.	47626.
85.	0.568	0.988	19.41	-1.352	-5981.	18.60	20.277	115.763	6275.	41501.	47776.
90.	0.689	0.985	19.21	-1.693	-6114.	18.66	21.311	113.552	6648.	41276.	47924.
95.	0.831	0.981	18.99	-2.048	-6255.	18.72	22.335	111.392	7022.	41048.	48070.
100.	0.996	0.978	18.76	-2.423	-6406.	18.79	23.348	109.279	7398.	40815.	48213.
105.	1.187	0.974	18.51	-2.822	-6567.	18.86	24.342	107.223	7771.	40583.	48354.
110.	1.408	0.971	18.24	-3.249	-6741.	18.93	25.326	105.210	8146.	40347.	48493.
115.	1.662	0.967	17.95	-3.709	-6929.	19.00	26.320	103.219	8530.	40099.	48629.
120.	1.951	0.963	17.65	-4.202	-7134.	19.08	27.278	101.294	8905.	39857.	48762.
125.	2.281	0.959	17.32	-4.728	-7356.	19.16	28.225	99.408	9280.	39611.	48891.
130.	2.655	0.955	16.97	-5.289	-7598.	19.24	29.162	97.561	9653.	39362.	49014.
135.	3.077	0.951	16.60	-5.884	-7860.	19.33	30.088	95.748	10032.	39109.	49141.
140.	3.552	0.947	16.21	-6.512	-8142.	19.41	31.004	93.970	10409.	38852.	49266.
145.	4.084	0.942	15.79	-7.174	-8444.	19.50	31.911	92.223	10787.	38589.	49376.
150.	4.679	0.938	15.34	-7.873	-8767.	19.60	32.808	90.506	11165.	38322.	49488.
155.	5.341	0.933	14.86	-8.607	-9112.	19.69	33.697	88.818	11545.	38050.	49595.
160.	6.076	0.928	14.36	-9.377	-9480.	19.78	34.579	87.156	11926.	37773.	49698.
165.	6.889	0.924	13.81	-10.180	-9872.	19.89	35.452	85.519	12308.	37489.	49797.
170.	7.786	0.919	13.24	-11.019	-10290.	20.00	36.318	83.906	12691.	37200.	49891.
175.	8.773	0.914	12.62	-11.891	-10734.	20.11	37.177	82.315	13075.	36904.	49980.
180.	9.857	0.909	12.02	-12.804	-11207.	20.22	38.029	80.744	13462.	36602.	50064.
185.	11.044	0.904	11.37	-13.756	-11707.	20.34	38.876	79.192	13849.	36293.	50142.
190.	12.340	0.898	10.55	-14.747	-12233.	20.46	39.716	77.659	14239.	35976.	50215.
195.	13.752	0.893	9.74	-15.774	-12791.	20.58	40.551	76.141	14631.	35651.	50282.

200.	15.287	0.887	8.89	-23.147	-15837.	20.71	41.381	74.639	116.020	15024.	35319.	50343.
205.	16.953	0.882	7.98	-24.963	-16723.	20.84	42.206	73.151	115.357	15420.	34977.	50397.
210.	18.756	0.876	7.02	-26.815	-17636.	20.98	43.027	71.675	114.702	15818.	34627.	50445.
215.	20.705	0.870	5.98	-28.695	-18574.	21.12	43.844	70.211	114.055	16219.	34268.	50486.
220.	22.808	0.864	4.88	-30.597	-19532.	21.27	44.657	68.756	113.413	16622.	33898.	50520.
225.	25.071	0.858	3.69	-32.509	-20507.	21.42	45.467	67.310	112.777	17028.	33519.	50566.
230.	27.504	0.852	2.41	-34.422	-21493.	21.58	46.275	65.871	112.145	17437.	33128.	50595.
235.	30.114	0.845	1.05	-36.323	-22483.	21.74	47.080	64.438	111.517	17849.	32726.	50575.
240.	32.911	0.839	-0.3	-38.197	-23472.	21.91	47.883	63.009	110.892	18255.	32311.	50576.
245.	35.902	0.832	-2.01	-40.028	-24465.	22.09	48.685	61.583	110.268	18685.	31884.	50569.
250.	39.098	0.825	-3.72	-41.797	-25404.	22.27	49.485	60.158	109.644	19109.	31443.	50552.
255.	42.507	0.818	-5.57	-43.582	-26387.	22.47	50.286	58.734	109.020	19557.	30987.	50524.
260.	46.138	0.811	-7.57	-45.056	-27201.	22.67	51.087	57.307	108.394	19970.	30517.	50486.
265.	50.002	0.803	-9.74	-46.491	-28012.	22.88	51.888	55.877	107.765	20407.	30030.	50437.
270.	54.108	0.795	-12.10	-47.751	-28737.	23.10	52.691	54.442	107.133	20851.	29525.	50376.
275.	58.466	0.787	-14.68	-48.793	-29354.	23.34	53.497	52.999	106.496	21300.	29003.	50303.
280.	63.088	0.779	-17.49	-49.571	-29834.	23.58	54.305	51.547	105.852	21756.	28460.	50216.
285.	67.983	0.771	-20.57	-50.024	-30141.	23.84	55.118	50.083	105.202	22219.	27897.	50116.
290.	73.163	0.762	-23.96	-50.084	-30235.	24.11	55.937	48.606	104.542	22690.	27311.	50071.
295.	78.640	0.753	-27.70	-49.665	-30064.	24.41	56.762	47.111	103.874	23169.	26701.	49871.
300.	84.426	0.744	-31.85	-48.667	-29565.	24.72	57.596	45.598	103.194	23659.	26065.	49724.
305.	(90.533)	0.734	-36.47	(-46.964)	(-28663.)	25.05	(58.441)	(44.061)	(102.503)	(24160.)	(25401.)	(49561.)
310.	(96.974)	0.723	-41.65	(-44.402)	(-27261.)	25.40	(59.293)	(42.499)	(101.798)	(24674.)	(24706.)	(49380.)
315.	(103.763)	0.713	-47.47	(-40.792)	(-25241.)	25.79	(60.173)	(40.905)	(101.078)	(25203.)	(23978.)	(49180.)
320.	(110.914)	0.701	-54.08	(-35.894)	(-22452.)	26.20	(61.067)	(39.276)	(100.343)	(25748.)	(23213.)	(48951.)
325.	(118.444)	0.689	-61.64	(-29.408)	(-18704.)	26.66	(61.985)	(37.606)	(99.591)	(26315.)	(22407.)	(48722.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 3. NaCl concentration:		0.9006 mol/kg H ₂ O				5.00 wt percent				1.597 mol percent			
t	P	d	$\frac{V^L}{d}$	$\frac{S_a^L}{d}$	$\frac{H_a^L}{d}$	$\frac{V^L}{d}$	$\frac{S^L}{d}$	$\frac{\Delta S}{d}$	$\frac{S^G}{d}$	$\frac{H^L}{d}$	$\frac{\Delta H}{d}$	$\frac{H^G}{d}$	
(°C)	(bars)	(g cm ⁻³)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	
80.	0.459	1.006	20.17	-10.305	-5837.	18.55	19.044	118.339	137.382	5816.	41812.	47628.	
85.	0.560	1.003	20.02	-10.462	-5905.	18.51	20.080	116.083	136.183	6184.	41594.	47778.	
90.	0.679	1.000	19.86	-10.621	-5975.	18.57	21.105	113.881	134.986	6554.	41372.	47921.	
95.	0.813	0.996	19.69	-10.788	-6048.	18.73	22.120	111.730	133.850	6925.	41147.	48073.	
100.	0.982	0.993	19.50	-10.967	-6128.	18.79	23.124	109.628	132.752	7298.	40919.	48217.	
105.	1.171	0.989	19.30	-11.161	-6214.	18.66	24.110	107.580	131.690	7668.	40690.	48358.	
110.	1.388	0.986	19.08	-11.372	-6308.	18.35	25.085	105.577	130.662	8039.	40458.	48497.	
115.	1.638	0.982	18.85	-8.381	-5186.	19.00	26.100	103.566	129.666	8431.	40203.	48634.	
120.	1.924	0.978	18.60	-9.004	-5444.	19.07	27.046	101.554	128.701	8801.	39967.	48767.	
125.	2.249	0.974	18.33	-9.683	-5727.	19.15	27.981	99.783	127.764	9171.	39727.	48898.	
130.	2.618	0.970	18.04	-10.419	-6038.	19.23	28.904	97.949	126.853	9541.	39484.	49025.	
135.	3.034	0.966	17.73	-11.215	-6377.	19.31	29.817	96.152	125.969	9912.	39237.	49149.	
140.	3.502	0.962	17.40	-12.072	-6745.	19.40	30.719	94.389	125.108	10283.	38986.	49269.	
145.	4.027	0.958	17.05	-12.991	-7144.	19.48	31.611	92.658	124.270	10655.	38731.	49386.	
150.	4.613	0.953	16.67	-13.973	-7575.	19.57	32.494	90.958	123.452	11027.	38472.	49499.	
155.	5.266	0.949	16.27	-15.018	-8037.	19.66	33.368	89.287	122.655	11400.	38207.	49607.	
160.	5.991	0.944	15.84	-16.125	-8535.	19.76	34.234	87.643	121.876	11774.	37938.	49711.	
165.	6.792	0.940	15.38	-17.292	-9061.	19.86	35.091	86.024	121.115	12148.	37663.	49812.	
170.	7.677	0.935	14.88	-18.520	-9622.	19.96	35.940	84.430	120.370	12524.	37383.	49907.	
175.	8.651	0.930	14.36	-19.804	-10215.	20.06	36.782	82.858	119.641	12901.	37097.	50007.	
180.	9.719	0.925	13.79	-21.144	-10840.	20.17	37.617	81.308	118.925	13279.	36804.	50083.	
185.	10.889	0.920	13.19	-22.534	-11495.	20.28	38.445	79.777	118.223	13658.	36505.	50163.	
190.	12.167	0.915	12.55	-23.972	-12181.	20.39	39.267	78.265	117.533	14039.	36199.	50238.	
195.	13.559	0.910	11.86	-25.452	-12894.	20.51	40.084	76.770	116.854	14422.	35885.	50307.	

200.	15.073	0.904	11.13	-26.969	-13632.	20.63	40.804	75.291	116.185	14806.	35564.	50370.
205.	16.715	0.899	10.34	-28.516	-14394.	20.76	41.700	73.825	115.526	15192.	35235.	50477.
210.	18.493	0.893	9.59	-30.086	-15175.	20.89	42.501	72.573	114.875	15580.	34897.	50478.
215.	20.425	0.888	8.89	-31.670	-15973.	21.02	43.298	70.933	114.231	15971.	34550.	50522.
220.	22.437	0.882	8.22	-33.259	-16781.	21.16	44.092	69.503	113.595	16364.	34194.	50558.
225.	24.718	0.876	7.62	-34.840	-17595.	21.30	44.882	68.081	112.963	16760.	33828.	50588.
230.	27.116	0.870	6.98	-36.402	-18409.	21.45	45.669	66.668	112.337	17159.	33451.	50610.
235.	29.689	0.864	6.46	-37.928	-19214.	21.61	46.455	65.260	111.715	17561.	33063.	50624.
240.	32.446	0.857	5.95	-39.403	-20002.	21.76	47.238	63.857	111.095	17967.	32663.	50629.
245.	35.395	0.851	5.45	-40.806	-20763.	21.93	48.021	62.457	110.478	18376.	32250.	50626.
250.	38.544	0.844	4.96	-42.114	-21483.	22.10	48.803	61.058	109.861	18790.	31824.	50614.
255.	41.904	0.837	4.48	-43.302	-22148.	22.28	49.586	59.658	109.245	19208.	31384.	50592.
260.	45.483	0.830	4.00	-44.338	-22741.	22.47	50.370	58.257	108.627	19631.	30928.	50559.
265.	49.290	0.823	3.53	-45.187	-23242.	22.67	51.157	56.851	108.007	20060.	30456.	50516.
270.	53.336	0.816	3.07	-45.807	-23627.	22.87	51.946	55.439	107.385	20496.	29965.	50462.
275.	57.631	0.808	2.62	-46.148	-23865.	23.08	52.740	54.018	106.758	20938.	29457.	50395.
280.	62.184	0.801	2.18	-46.153	-23924.	23.31	53.539	52.586	106.128	21388.	28929.	50316.
285.	67.007	0.793	1.75	-45.751	-23761.	23.55	54.346	51.141	105.497	21847.	28378.	50224.
290.	72.110	0.784	1.33	-44.820	-23526.	23.79	55.162	49.679	104.841	22315.	27803.	50119.
295.	77.505	0.776	0.92	-43.378	-22557.	24.06	55.989	48.197	104.186	22795.	27203.	49958.
300.	83.203	0.767	0.52	-41.184	-21381.	24.34	56.831	46.691	103.522	23288.	26574.	49862.
305.	(89.218)	0.757	(-29.09)	(-38.130)	(-19705.)	24.64	(57.690)	(45.157)	(102.847)	(23796.)	(25914.)	(49711.)
310.	(95.561)	0.748	(-33.68)	(-34.030)	(-17415.)	24.96	(58.570)	(43.589)	(102.159)	(24222.)	(25220.)	(49542.)
315.	(102.245)	0.738	(-38.85)	(-28.658)	(-14567.)	25.30	(59.476)	(41.983)	(101.459)	(24868.)	(24488.)	(49356.)
320.	(109.286)	0.727	(-44.70)	(-21.728)	(-10381.)	25.67	(60.414)	(40.330)	(100.744)	(25439.)	(23712.)	(49152.)
325.	(116.697)	0.716	(-51.36)	(-12.877)	(-5229.)	26.07	(61.392)	(38.622)	(100.014)	(26039.)	(22888.)	(48928.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

B28 PRELIMINARY STEAM TABLES FOR NaCl SOLUTIONS

Table 4. NaCl concentration: 1.0000 mol/kg H ₂ O												
5.52 wt percent												
1.770 mol percent												
t (°C)	P (bars)	d ^L (g cm ⁻³)	\bar{V}_g^L (cm ³ mol ⁻¹)	\bar{S}_g^L (J mol ⁻¹ K ⁻¹)	\bar{H}_g^L (J mol ⁻¹)	\bar{V}_g^L (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L (J mol ⁻¹)	ΔH (J mol ⁻¹)	H ^G
80.	0.457	1.010	20.29	-11.999	-5830.	18.55	18.989	118.424	137.413	5795.	41834.	47629.
85.	0.558	1.006	20.15	-12.120	-5885.	18.61	20.023	116.171	136.194	6163.	41616.	47779.
90.	0.677	1.003	20.00	-12.242	-5942.	18.67	21.046	113.971	135.017	6532.	41395.	47927.
95.	0.816	1.000	19.84	-12.371	-6002.	18.73	22.059	111.822	133.881	6902.	41171.	48073.
100.	0.979	0.997	19.66	-12.511	-6067.	18.79	23.062	109.722	132.783	7274.	40944.	48218.
105.	1.167	0.993	19.47	-12.663	-6138.	18.86	24.046	107.676	131.722	7643.	40716.	48353.
110.	1.384	0.990	19.26	-12.832	-6216.	18.93	25.019	105.675	130.694	8014.	40484.	48498.
115.	1.635	0.986	19.04	-13.048	-6301.	19.00	26.040	103.658	129.598	8408.	40227.	48635.
120.	1.917	0.982	18.80	-13.241	-6397.	19.07	26.984	101.749	128.733	8776.	39992.	48769.
125.	2.241	0.978	18.54	-13.487	-6508.	19.15	27.915	99.881	127.796	9145.	39754.	48899.
130.	2.609	0.974	18.26	-13.891	-6636.	19.23	28.836	98.051	126.886	9515.	39512.	49027.
135.	3.024	0.970	17.97	-14.353	-6781.	19.31	29.745	96.257	126.002	9884.	39287.	49151.
140.	3.490	0.966	17.65	-14.875	-6946.	19.39	30.644	94.497	125.142	10254.	39018.	49271.
145.	4.013	0.962	17.31	-15.459	-7136.	19.48	31.533	92.770	124.304	10624.	38764.	49388.
150.	4.597	0.957	16.95	-16.004	-7356.	19.57	32.413	91.074	123.487	10995.	38506.	49501.
155.	5.248	0.953	16.56	-16.011	-7603.	19.66	33.283	89.407	122.690	11366.	38244.	49610.
160.	5.969	0.948	16.15	-17.078	-8242.	19.75	34.145	87.767	121.912	11738.	37976.	49715.
165.	6.768	0.944	15.70	-18.206	-8953.	19.85	34.999	86.153	121.151	12111.	37704.	49815.
170.	7.650	0.939	15.23	-19.392	-9706.	19.95	35.844	84.563	120.407	12485.	37426.	49911.
175.	8.620	0.934	14.72	-20.633	-10570.	20.05	36.682	82.966	119.678	12860.	37141.	50008.
180.	9.685	0.929	14.18	-21.928	-11476.	20.16	37.513	81.450	118.965	13237.	36851.	50086.
185.	10.850	0.924	13.60	-23.273	-12411.	20.27	38.337	79.924	118.262	13614.	36554.	50168.
190.	12.124	0.919	12.98	-24.662	-13475.	20.38	39.155	78.417	117.572	13993.	36251.	50244.
195.	13.511	0.914	12.31	-26.093	-14665.	20.50	39.967	76.927	116.894	14373.	35940.	50313.

200.	15.019	0.909	11.60	-27.558	-13180.	20.62	40.773	75.453	116.226	14756.	35621.	50377.
205.	16.655	0.903	10.84	-29.051	-13917.	20.74	41.575	73.993	115.568	15140.	35295.	50434.
210.	18.427	0.898	10.02	-30.564	-14671.	20.87	42.372	72.546	114.918	15526.	34960.	50486.
215.	20.342	0.892	9.14	-32.089	-15440.	21.00	43.164	71.112	114.276	15914.	34616.	50530.
220.	22.407	0.886	8.20	-33.615	-16219.	21.14	43.953	69.687	113.640	16305.	34263.	50583.
225.	24.630	0.880	7.18	-35.131	-17001.	21.28	44.739	68.272	113.010	16698.	33900.	50628.
230.	27.019	0.874	6.10	-36.623	-17780.	21.42	45.522	66.864	112.385	17095.	33526.	50671.
235.	29.583	0.868	4.92	-38.076	-18590.	21.58	46.303	65.462	111.766	17495.	33141.	50718.
240.	32.329	0.862	3.66	-39.472	-19298.	21.73	47.082	64.064	111.146	17898.	32745.	50763.
245.	35.267	0.855	2.30	-40.791	-20016.	21.90	47.860	62.670	110.531	18305.	32355.	50811.
250.	38.405	0.849	0.83	-42.010	-20690.	22.07	48.639	61.277	109.916	18717.	31913.	50859.
255.	41.752	0.842	-0.77	-43.102	-21306.	22.24	49.418	59.883	109.301	19133.	31475.	50908.
260.	45.318	0.835	-2.50	-44.034	-21845.	22.43	50.199	58.487	108.686	19554.	31023.	50957.
265.	49.111	0.828	-4.37	-44.771	-22286.	22.62	50.982	57.086	108.068	19981.	30554.	51006.
270.	53.142	0.821	-6.41	-45.269	-22605.	22.82	51.768	55.679	107.448	20415.	30068.	51054.
275.	57.421	0.813	-8.64	-45.478	-22772.	23.03	52.560	54.263	106.823	20856.	29562.	51102.
280.	61.957	0.806	-11.08	-45.336	-22751.	23.25	53.358	52.836	106.194	21305.	29036.	51150.
285.	66.762	0.798	-13.75	-44.774	-22499.	23.48	54.164	51.394	105.558	21763.	28488.	51201.
290.	71.845	0.790	-16.09	-43.704	-21965.	23.72	54.981	49.935	104.915	22232.	27916.	51251.
295.	77.220	0.781	-19.94	-42.024	-21086.	23.98	55.810	48.454	104.264	22713.	27317.	51300.
300.	82.896	0.772	-23.53	-39.609	-19784.	24.25	56.655	46.949	103.604	23207.	26689.	49897.
305.	88.887	0.763	-27.53	-36.304	-17954.	24.54	57.518	45.414	102.932	23718.	26030.	49748.
310.	95.206	0.754	-32.00	-31.922	-15510.	24.85	58.405	43.844	102.249	24247.	25335.	49582.
315.	101.864	0.744	-37.03	-26.226	-12273.	25.19	59.321	42.232	101.554	24799.	24600.	49400.
320.	108.877	0.733	-42.72	-18.524	-8068.	25.55	60.273	40.572	100.848	25377.	23821.	49199.
325.	116.259	0.722	-49.13	-9.641	-2653.	25.93	61.268	38.852	100.119	25987.	22931.	48979.

Note.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 5. NaCl concentration:				1.5000 mol/kg H ₂ O				8.06 wt percent				2.631 mol percent			
t (°C)	p (bars)	d ^L (g cm ⁻³)	\bar{V}_a^L (cm ³ mol ⁻¹)	\bar{S}_a^L (J mol ⁻¹ K ⁻¹)	\bar{H}_a^L (J mol ⁻¹)	\bar{V}^L (cm ³ mol ⁻¹)	\bar{S}^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	\bar{S}^G	H ^L	ΔH (J mol ⁻¹)	H ^G			
80.	0.449	1.027	20.83	-18.660	-5756.	18.57	18.679	118.890	137.569	5692.	41939.	47631.			
85.	0.548	1.024	20.73	-18.630	-5758.	18.63	19.705	116.646	136.351	6057.	41725.	47782.			
90.	0.665	1.021	20.61	-18.596	-5760.	18.68	20.720	114.455	135.175	6423.	41508.	47931.			
95.	0.802	1.018	20.49	-18.562	-5762.	18.74	21.724	112.316	134.040	6790.	41288.	48077.			
100.	0.961	1.015	20.35	-18.533	-5765.	18.80	22.719	110.225	132.944	7158.	41064.	48222.			
105.	1.146	1.011	20.20	-18.510	-5771.	18.87	23.695	108.188	131.883	7525.	40833.	48364.			
110.	1.359	1.008	20.04	-18.495	-5781.	18.94	24.661	106.186	130.857	7892.	40612.	48504.			
115.	1.603	1.004	19.87	-18.535	-5790.	19.00	25.719	104.184	129.863	8300.	40341.	48641.			
120.	1.883	1.000	19.68	-18.492	-5485.	19.07	26.649	102.249	128.899	8693.	40112.	48776.			
125.	2.201	0.996	19.47	-18.399	-4702.	19.15	27.568	100.396	127.964	9027.	39880.	48907.			
130.	2.562	0.992	19.25	-16.058	-4943.	19.22	28.474	98.581	127.056	9390.	39645.	49036.			
135.	2.969	0.988	19.02	-16.673	-5211.	19.30	29.370	96.803	126.173	9754.	39407.	49161.			
140.	3.427	0.984	18.76	-17.344	-5504.	19.38	30.254	95.060	125.315	10118.	39165.	49282.			
145.	3.941	0.980	18.48	-18.072	-5826.	19.46	31.129	93.350	124.479	10481.	38919.	49401.			
150.	4.514	0.976	18.19	-18.857	-6175.	19.55	31.993	91.672	123.665	10845.	38670.	49515.			
155.	5.153	0.972	17.87	-19.699	-6554.	19.64	32.847	90.023	122.870	11210.	38416.	49625.			
160.	5.862	0.967	17.52	-20.597	-6962.	19.73	33.692	88.403	122.095	11575.	38157.	49732.			
165.	6.646	0.963	17.15	-21.549	-7398.	19.82	34.528	86.809	121.337	11940.	37894.	49834.			
170.	7.512	0.958	16.76	-22.555	-7863.	19.91	35.356	85.234	120.596	12306.	37625.	49931.			
175.	8.466	0.953	16.33	-23.611	-8357.	20.01	36.176	83.684	119.870	12672.	37352.	50024.			
180.	9.510	0.949	15.87	-24.713	-8875.	20.11	36.989	82.170	119.159	13040.	37072.	50112.			
185.	10.654	0.944	15.38	-25.853	-9425.	20.22	37.794	80.667	118.461	13408.	36782.	50195.			
190.	11.904	0.939	14.85	-27.043	-9993.	20.32	38.592	79.163	117.775	13778.	36495.	50273.			
195.	13.266	0.934	14.29	-28.260	-10588.	20.43	39.384	77.717	117.101	14149.	36196.	50345.			

200.	14.746	0.929	13.68	-29.503	-11201.	20.55	40.171	76.267	116.488	14521.	35890.	50411.
205.	16.355	0.925	13.02	-30.765	-11829.	20.66	40.952	74.832	115.784	14895.	35577.	50472.
210.	18.092	0.918	12.32	-32.037	-12470.	20.78	41.728	73.411	115.140	15271.	35255.	50527.
215.	19.971	0.913	11.56	-33.309	-13119.	20.91	42.501	72.002	114.503	15649.	34925.	50575.
220.	21.998	0.907	10.75	-34.571	-13770.	21.03	43.269	70.604	113.873	16030.	34586.	50616.
225.	24.180	0.901	9.87	-35.809	-14417.	21.17	44.034	69.215	113.249	16413.	34238.	50651.
230.	26.525	0.896	8.92	-37.009	-15053.	21.30	44.797	67.834	112.631	16799.	33879.	50678.
235.	29.041	0.890	7.90	-38.153	-15668.	21.44	45.559	66.459	112.017	17188.	33509.	50637.
240.	31.737	0.884	6.80	-39.222	-16252.	21.59	46.319	65.088	111.407	17581.	33128.	50709.
245.	34.520	0.878	5.61	-40.194	-16793.	21.74	47.079	63.720	110.799	17978.	32734.	50712.
250.	37.499	0.871	4.32	-41.042	-17277.	21.83	47.840	62.353	110.193	18380.	32327.	50707.
255.	40.683	0.865	2.92	-41.757	-17686.	22.06	48.604	60.985	109.588	18787.	31905.	50693.
260.	44.161	0.858	1.40	-42.244	-18002.	22.22	49.370	59.613	108.983	19200.	31468.	50668.
265.	48.003	0.852	-0.25	-42.522	-18200.	22.40	50.141	58.235	108.376	19620.	31016.	50634.
270.	52.157	0.845	-2.05	-42.523	-18253.	22.58	50.918	56.850	107.768	20048.	30542.	50580.
275.	56.554	0.838	-4.01	-42.151	-18128.	22.77	51.703	55.455	107.156	20484.	30049.	50534.
280.	60.803	0.831	-6.16	-41.459	-17784.	22.97	52.498	54.043	106.540	20931.	29555.	50466.
285.	65.515	0.823	-8.52	-40.248	-17175.	23.18	53.305	52.614	105.920	21389.	28998.	50387.
290.	70.500	0.816	-11.11	-38.464	-16242.	23.39	54.129	51.164	105.293	21860.	28434.	50294.
295.	75.770	0.808	-13.97	-35.991	-14916.	23.62	54.971	49.688	104.659	22347.	27841.	50188.
300.	81.335	0.800	-17.14	-32.691	-13111.	23.86	55.836	48.180	104.016	22853.	27215.	50063.
305.	(87.298)	0.791	-20.67	(-22.393)	(-10722.)	24.12	(56.731)	(46.634)	(103.365)	(23380.)	(26553.)	(49533.)
310.	(93.401)	0.782	-24.60	(-22.887)	(-7617.)	24.39	(57.660)	(45.043)	(102.703)	(23932.)	(25850.)	(49783.)
315.	(99.926)	0.773	-29.01	(-15.913)	(-3633.)	24.68	(58.632)	(43.399)	(102.031)	(24515.)	(25101.)	(49616.)
320.	(106.797)	0.764	-33.99	(-7.154)	(1437.)	24.99	(59.657)	(41.689)	(101.346)	(25136.)	(24297.)	(49433.)
325.	(114.029)	0.754	-39.64	(3.837)	(7856.)	25.32	(60.767)	(39.900)	(100.647)	(25801.)	(23431.)	(49232.)

Norw.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 6. NaCl concentration:			1.9012 mol/kg H ₂ O				10.00 wt percent				3.312 mol percent			
t (°C)	p (bars)	d ^L (g cm ⁻³)	\bar{V}_a^L (cm ³ mol ⁻¹)	\bar{S}_a^L (J mol ⁻¹ K ⁻¹)	\bar{H}_a^L (J mol ⁻¹)	\bar{V}^L (cm ³ mol ⁻¹)	\bar{S}^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	\bar{S}^G	H ^L	ΔH	H ^G		
											(J mol ⁻¹)			
80.	0.442	1.041	21.20	-22.599	-5650.	18.59	18.400	119.298	137.699	5613.	42020.	47633.		
85.	0.540	1.038	21.12	-22.468	-5617.	18.64	19.421	117.060	136.481	5976.	41808.	47784.		
90.	0.655	1.035	21.03	-22.330	-5582.	18.70	20.430	114.876	135.506	6380.	41594.	47933.		
95.	0.790	1.032	20.93	-22.189	-5545.	18.76	21.429	112.743	134.172	6705.	41376.	48080.		
100.	0.947	1.029	20.82	-22.049	-5508.	18.82	22.418	110.658	133.076	7071.	41155.	48225.		
105.	1.129	1.025	20.71	-21.910	-5471.	18.88	23.391	108.626	132.017	7436.	40932.	48368.		
110.	1.338	1.022	20.58	-21.775	-5436.	18.94	24.352	106.640	130.992	7801.	40707.	48509.		
115.	1.579	1.018	20.44	-17.340	-3765.	19.01	25.443	104.555	129.998	8222.	40425.	48646.		
120.	1.855	1.014	20.28	-17.704	-3924.	19.08	26.365	102.671	129.036	8581.	40200.	48782.		
125.	2.168	1.011	20.11	-18.116	-4104.	19.15	27.274	100.828	128.102	8941.	39973.	48914.		
130.	2.524	1.007	19.93	-18.578	-4307.	19.23	28.171	99.024	127.195	9301.	39742.	49043.		
135.	2.925	1.003	19.73	-19.093	-4535.	19.30	29.057	97.258	126.314	9660.	39509.	49169.		
140.	3.376	0.999	19.52	-19.661	-4787.	19.38	29.931	95.527	125.458	10019.	39272.	49292.		
145.	3.882	0.995	19.29	-20.283	-5065.	19.46	30.794	93.829	124.624	10378.	39032.	49411.		
150.	4.447	0.990	19.03	-20.960	-5371.	19.54	31.647	92.164	123.811	10738.	38788.	49526.		
155.	5.076	0.986	18.76	-21.690	-5703.	19.63	32.490	90.528	123.019	11097.	38541.	49638.		
160.	5.774	0.982	18.47	-22.474	-6062.	19.72	33.324	88.922	122.246	11457.	38288.	49745.		
165.	6.547	0.977	18.15	-23.310	-6448.	19.80	34.148	87.362	121.490	11816.	38033.	49849.		
170.	7.399	0.973	17.80	-24.194	-6861.	19.80	34.963	85.788	120.751	12177.	37771.	49948.		
175.	8.337	0.968	17.43	-25.125	-7300.	19.89	35.771	84.258	120.028	12537.	37505.	50042.		
180.	9.367	0.963	17.04	-26.100	-7764.	20.09	36.570	82.750	119.320	12899.	37233.	50132.		
185.	10.494	0.959	16.60	-27.113	-8251.	20.19	37.362	81.263	118.625	13261.	36956.	50216.		
190.	11.725	0.954	16.14	-28.160	-8760.	20.29	38.146	79.796	117.942	13624.	36672.	50296.		
195.	13.066	0.949	15.64	-29.235	-9289.	20.40	38.925	78.347	117.272	13988.	36383.	50370.		

200.	14.524	0.844	15.10	-30.331	-9833.	20.50	39.697	75.915	116.612	14353.	36086.	50439.
205.	16.106	0.839	14.52	-31.441	-10300.	20.62	40.664	75.498	115.952	14720.	35782.	50500.
210.	17.819	0.834	13.90	-32.564	-10857.	20.73	41.826	74.095	115.322	15088.	35470.	50560.
215.	19.670	0.828	13.22	-33.662	-11527.	20.85	43.184	72.705	114.689	15460.	35150.	50610.
220.	21.665	0.823	12.49	-34.752	-12094.	20.97	44.738	71.325	114.064	15833.	34822.	50655.
225.	23.814	0.818	11.71	-35.810	-12654.	21.09	46.490	69.955	113.445	16209.	34484.	50695.
230.	26.123	0.812	10.86	-36.820	-13196.	21.22	48.439	68.593	112.832	16588.	34136.	50725.
235.	28.601	0.806	9.94	-37.765	-13711.	21.36	50.587	67.237	112.224	16970.	33777.	50747.
240.	31.254	0.801	8.95	-38.625	-14190.	21.49	52.935	65.885	111.620	17356.	33407.	50762.
245.	34.093	0.895	7.87	-39.375	-14618.	21.63	55.483	64.535	111.018	17746.	33024.	50770.
250.	37.124	0.889	6.71	-39.988	-14980.	21.78	57.234	63.186	110.419	18142.	32627.	50769.
255.	40.357	0.882	5.44	-40.432	-15260.	21.93	59.187	61.835	109.824	18544.	32216.	50760.
260.	43.801	0.876	4.07	-40.671	-15435.	22.09	61.345	60.479	109.224	18952.	31790.	50741.
265.	47.464	0.870	2.57	-40.661	-15480.	22.25	63.709	59.117	108.627	19368.	31345.	50713.
270.	51.356	0.863	0.94	-40.352	-15367.	22.42	66.282	57.765	108.027	19792.	30882.	50673.
275.	55.587	0.857	-0.84	-39.685	-15160.	22.59	69.065	56.360	107.426	20227.	30399.	50626.
280.	59.865	0.850	-2.79	-38.569	-14851.	22.78	72.062	54.959	106.821	20674.	29882.	50580.
285.	64.502	0.843	-4.95	-36.981	-14517.	22.97	75.275	53.536	106.211	21134.	29360.	50494.
290.	69.407	0.835	-7.29	-34.760	-14111.	23.17	78.708	52.089	105.597	21610.	28800.	50410.
295.	74.592	0.828	-9.89	-31.804	-13613.	23.37	82.365	50.611	104.976	22105.	28208.	50313.
300.	80.067	0.820	-12.77	-27.968	-12803.	23.59	86.253	49.095	104.348	22622.	27581.	50203.
305.	(85.844)	0.812	-15.96	(-23.071)	(-12070.)	23.82	(56.178)	(47.535)	(103.712)	(23165.)	(26914.)	(50079.)
310.	(91.935)	0.804	-19.53	(-16.891)	(-10573.)	24.06	(57.147)	(45.920)	(103.067)	(23740.)	(26201.)	(49941.)
315.	(98.352)	0.796	-23.52	(-9.151)	(1859.)	24.32	(58.171)	(44.241)	(102.412)	(24352.)	(25435.)	(49781.)
320.	(105.108)	0.787	-28.01	(0.494)	(7446.)	24.60	(59.263)	(42.483)	(101.746)	(25011.)	(24607.)	(49617.)
325.	(112.218)	0.778	-33.10	(12.466)	(14470.)	24.89	(60.438)	(40.630)	(101.068)	(25725.)	(23706.)	(49431.)

Norg.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

200.	14.469	0.948	15.43	-30.471	-9516.	20.50	30.582	77.073	116.655	18315.	36132.	50446.
205.	16.045	0.943	14.87	-31.547	-10057.	20.61	40.346	75.661	116.007	18680.	35830.	50510.
210.	17.751	0.937	14.26	-32.025	-10607.	20.72	41.105	74.262	115.367	15047.	35521.	50568.
215.	19.595	0.932	13.60	-33.696	-11159.	20.83	41.859	72.876	114.735	15416.	35203.	50619.
220.	21.583	0.927	12.89	-34.747	-11708.	20.95	42.610	71.501	114.111	15788.	34877.	50664.
225.	23.723	0.921	12.13	-35.764	-12248.	21.08	43.359	70.135	113.494	16162.	34541.	50703.
230.	26.024	0.916	11.30	-36.733	-12769.	21.21	44.105	68.777	112.882	16539.	34196.	50734.
235.	28.491	0.910	10.41	-37.634	-13263.	21.34	44.850	67.425	112.275	16919.	33840.	50759.
240.	31.135	0.905	9.44	-38.447	-13717.	21.47	45.595	66.078	111.673	17304.	33472.	50775.
245.	33.962	0.899	8.39	-39.147	-14120.	21.61	46.341	64.732	111.073	17693.	33091.	50784.
250.	36.982	0.893	7.26	-39.708	-14456.	21.75	47.089	63.387	110.476	18087.	32697.	50785.
255.	40.202	0.887	6.02	-40.097	-14707.	21.90	47.840	62.040	109.880	18488.	32289.	50777.
260.	43.633	0.880	4.68	-40.277	-14850.	22.06	48.596	60.688	109.284	18895.	31864.	50759.
265.	47.281	0.874	3.22	-40.204	-14862.	22.22	49.359	59.329	108.688	19310.	31423.	50739.
270.	51.158	0.868	1.63	-39.827	-14713.	22.38	50.132	57.960	108.091	19738.	30962.	50696.
275.	55.272	0.861	-0.11	-39.087	-14466.	22.55	50.915	56.577	107.492	20168.	30480.	50658.
280.	59.633	0.854	-2.02	-37.911	-13779.	22.73	51.712	55.178	106.890	20615.	29970.	50590.
285.	64.251	0.847	-4.11	-36.216	-12902.	22.92	52.527	53.756	106.283	21076.	29444.	50520.
290.	69.137	0.840	-6.41	-33.500	-11872.	23.11	53.363	52.309	105.672	21554.	28884.	50438.
295.	74.301	0.833	-8.95	-30.839	-10015.	23.32	54.225	50.829	105.054	22051.	28293.	50344.
300.	79.753	0.825	-11.76	-26.887	-7839.	23.53	55.118	49.311	104.430	22571.	27665.	50236.
305.	(85.507)	0.818	-14.88	(-21.860)	(-5031.)	23.75	(56.051)	(47.747)	(103.797)	(23119.)	(26996.)	(50115.)
310.	(91.572)	0.810	-18.36	(-15.534)	(-1450.)	23.99	(57.031)	(46.126)	(103.156)	(23700.)	(26280.)	(49979.)
315.	(97.963)	0.801	-22.26	(-7.630)	(3079.)	24.24	(58.068)	(44.437)	(102.506)	(24320.)	(25509.)	(49829.)
320.	(104.691)	0.793	-26.64	(2.204)	(8778.)	24.51	(59.177)	(42.667)	(101.844)	(24988.)	(24674.)	(49662.)
325.	(111.771)	0.783	-31.59	(14.414)	(15931.)	24.79	(60.375)	(40.796)	(101.171)	(25715.)	(23764.)	(49480.)

Note.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 8. NaCl concentration:			2.5000 mol/kg H ₂ O			12.75 wt percent			4.310 mol percent		
t (°C)	P (bars)	d ^L (g cm ⁻³)	\bar{V}_a^L (cm ³ mol ⁻¹)	\bar{S}_a^L (J mol ⁻¹ K ⁻¹)	\bar{H}_a^L (J mol ⁻¹)	\bar{V}^L (cm ³ mol ⁻¹)	\bar{S}^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	\bar{S}^L (J mol ⁻¹ K ⁻¹)	\bar{H}^L (J mol ⁻¹)	H ^G
80.	0.432	1.061	21.68	-27.104	-5414.	18.62	17.948	119.952	137.901	5500.	47636.
85.	0.528	1.058	21.63	-26.844	-5336.	18.67	18.962	117.722	136.684	5660.	47788.
90.	0.640	1.055	21.58	-26.573	-5255.	18.72	19.965	115.545	135.510	6222.	47937.
95.	0.771	1.052	21.52	-26.296	-5167.	18.78	20.958	113.419	134.377	6584.	48085.
100.	0.925	1.049	21.45	-26.014	-5078.	18.84	21.941	111.341	133.282	6948.	48231.
105.	1.102	1.045	21.37	-25.729	-4987.	18.90	22.909	109.316	132.225	7311.	48374.
110.	1.307	1.042	21.28	-25.441	-4895.	18.97	23.865	107.336	131.201	7675.	48516.
115.	1.543	1.038	21.19	-25.144	-4801.	19.03	25.012	105.197	130.209	8116.	48654.
120.	1.812	1.035	21.08	-20.687	-4710.	19.10	25.922	103.326	129.248	8471.	48790.
125.	2.118	1.031	20.96	-20.976	-4625.	19.17	26.819	101.497	128.316	8826.	48924.
130.	2.465	1.027	20.82	-21.311	-4540.	19.24	27.704	99.707	127.411	9180.	49054.
135.	2.857	1.023	20.68	-21.696	-4454.	19.31	28.577	97.956	126.533	9534.	49181.
140.	3.298	1.019	20.52	-22.132	-4368.	19.39	29.438	96.240	125.678	9887.	49305.
145.	3.792	1.015	20.34	-22.618	-4282.	19.46	30.288	94.559	124.847	10241.	49426.
150.	4.344	1.011	20.15	-23.155	-4253.	19.54	31.126	92.911	124.037	10594.	49543.
155.	4.959	1.007	19.93	-23.743	-4222.	19.63	31.955	91.293	123.248	10946.	49656.
160.	5.641	1.002	19.70	-24.380	-4190.	19.71	32.773	89.705	122.478	11299.	49766.
165.	6.396	0.998	19.45	-25.065	-4154.	19.79	33.581	88.144	121.725	11652.	49871.
170.	7.229	0.994	19.18	-25.795	-4118.	19.88	34.380	86.610	120.990	12004.	49972.
175.	8.145	0.989	18.88	-26.567	-4080.	19.97	35.171	85.100	120.271	12357.	50069.
180.	9.151	0.985	18.56	-27.378	-4041.	20.06	35.953	83.613	119.566	12710.	50161.
185.	10.252	0.980	18.21	-28.223	-4000.	20.16	36.727	82.148	118.876	13064.	50249.
190.	11.454	0.975	17.83	-29.097	-3958.	20.26	37.494	80.704	118.198	13419.	50331.
195.	12.765	0.971	17.42	-29.993	-3915.	20.36	38.255	79.278	117.532	13774.	50409.

200.	14.189	0.866	16.97	-30.904	-7998.	20.46	39.009	77.869	116.878	14130.	36351.	50481.
205.	15.734	0.861	16.49	-31.822	-8465.	20.56	39.757	76.476	116.234	14488.	36059.	50548.
210.	17.407	0.956	15.97	-32.737	-8937.	20.67	40.501	75.098	115.599	14848.	35761.	50609.
215.	19.215	0.951	15.40	-33.658	-9408.	20.78	41.241	73.732	114.973	15209.	35455.	50664.
220.	21.164	0.946	14.79	-34.513	-9872.	20.89	41.977	72.377	114.354	15573.	35140.	50713.
225.	23.262	0.940	14.12	-35.347	-10321.	21.01	42.711	71.032	113.743	15939.	34816.	50755.
230.	25.517	0.935	13.40	-36.123	-10748.	21.13	43.443	69.694	113.137	16309.	34482.	50791.
235.	27.936	0.930	12.62	-36.822	-11141.	21.25	44.175	68.363	112.537	16682.	34138.	50820.
240.	30.528	0.924	11.77	-37.423	-11488.	21.38	44.907	67.035	111.942	17060.	33782.	50841.
245.	33.299	0.919	10.85	-37.901	-11777.	21.51	45.642	65.708	111.350	17442.	33413.	50856.
250.	36.259	0.913	9.85	-38.226	-11991.	21.64	46.379	64.382	110.761	17831.	33031.	50862.
255.	39.416	0.907	8.76	-38.564	-12111.	21.78	47.122	63.052	110.174	18226.	32634.	50860.
260.	42.777	0.901	7.58	-38.277	-12115.	21.92	47.872	61.716	109.588	18629.	32220.	50849.
265.	46.353	0.895	6.28	-37.919	-11975.	22.07	48.631	60.372	109.003	19041.	31788.	50829.
270.	50.132	0.889	4.87	-37.277	-11663.	22.22	49.402	59.015	108.417	19464.	31336.	50800.
275.	54.133	0.883	3.33	-36.157	-11133.	22.37	50.187	57.642	107.829	19899.	30865.	50761.
280.	58.466	0.877	1.64	-34.655	-10333.	22.54	50.991	56.268	107.240	20348.	30365.	50712.
285.	63.980	0.870	-0.22	-32.551	-9261.	22.70	51.817	54.853	106.647	20815.	29835.	50551.
290.	67.786	0.864	-2.27	-29.810	-7794.	22.88	52.671	53.379	106.050	21301.	29279.	50380.
295.	72.823	0.857	-4.52	-26.282	-5877.	23.06	53.558	51.891	105.448	21811.	28685.	50197.
300.	78.163	0.850	-7.02	-21.812	-3402.	23.25	54.485	50.356	104.841	22349.	28052.	50401.
305.	(83.797)	0.843	-9.78	(-16.208)	(-262.)	23.44	(55.461)	(48.765)	(104.226)	(22921.)	(27372.)	(50393.)
310.	(89.736)	0.835	-12.86	(-9.234)	(3695.)	23.65	(56.498)	(47.107)	(103.605)	(23533.)	(26637.)	(50171.)
315.	(95.992)	0.828	-16.30	(-0.596)	(8654.)	23.87	(57.608)	(45.367)	(102.975)	(24195.)	(25841.)	(50035.)
320.	(102.578)	0.820	-20.16	(10.076)	(14845.)	24.09	(58.809)	(43.527)	(102.336)	(24915.)	(24969.)	(49885.)
325.	(109.506)	0.812	-24.50	(23.252)	(22579.)	24.34	(60.122)	(41.565)	(101.687)	(25710.)	(24010.)	(49719.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

NaCl concentration:			3.000 mol/kg H ₂ O			14.92 wt percent			5.127 mol percent			
t	P	d ^L	\bar{v}_g^L	\bar{S}_g^L	\bar{H}_g^L	V ^L	S ^L	ΔS	S ^G	H ^L	ΔH	H ^G
(°C)	(bars)	(g cm ⁻³)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)
80.	0.423	1.077	22.04	-29.998	-5145.	18.65	17.545	120.534	138.078	5409.	42239.	47639.
85.	0.517	1.074	22.02	-29.644	-5034.	18.70	18.555	118.308	136.862	5768.	42023.	47791.
90.	0.627	1.071	21.99	-29.277	-4917.	18.75	19.554	116.135	135.689	6128.	41815.	47941.
95.	0.756	1.068	21.95	-28.900	-4795.	18.81	20.543	114.013	134.557	6489.	41600.	48089.
100.	0.906	1.065	21.91	-28.516	-4669.	18.87	21.523	111.940	133.463	6852.	41384.	48235.
105.	1.080	1.061	21.86	-28.125	-4539.	18.93	22.488	109.918	132.406	7214.	41166.	48380.
110.	1.281	1.058	21.81	-27.729	-4405.	18.99	23.441	107.941	131.383	7576.	40946.	48521.
115.	1.512	1.054	21.74	-27.350	-4275.	19.05	24.388	105.754	130.392	8036.	40625.	48661.
120.	1.775	1.051	21.67	-26.985	-4141.	19.12	25.320	103.893	129.433	8387.	40410.	48798.
125.	2.076	1.047	21.58	-26.634	-4008.	19.19	26.249	102.073	128.502	8739.	40193.	48932.
130.	2.416	1.043	21.49	-26.297	-3876.	19.25	27.165	100.294	127.599	9089.	39974.	49065.
135.	2.800	1.039	21.38	-25.974	-3745.	19.33	28.169	98.553	126.722	9439.	39752.	49192.
140.	3.232	1.035	21.26	-25.664	-3615.	19.40	29.020	96.849	125.869	9788.	39528.	49317.
145.	3.716	1.031	21.13	-25.365	-3486.	19.48	29.860	95.180	125.040	10138.	39301.	49439.
150.	4.257	1.027	20.98	-25.076	-3354.	19.55	30.689	93.543	124.232	10486.	39071.	49557.
155.	4.860	1.023	20.81	-24.796	-3231.	19.63	31.507	91.939	123.445	10834.	38838.	49672.
160.	5.528	1.019	20.63	-24.524	-3105.	19.71	32.314	90.364	122.677	11182.	38601.	49785.
165.	6.268	1.015	20.45	-24.261	-2980.	19.80	33.111	88.837	121.928	11529.	38361.	49890.
170.	7.084	1.010	20.21	-24.006	-2856.	19.88	33.898	87.257	121.195	11876.	38117.	49993.
175.	7.983	1.006	19.96	-23.759	-2733.	19.95	34.677	85.802	120.479	12224.	37868.	50092.
180.	8.968	1.002	19.70	-23.520	-2611.	20.02	35.446	84.351	119.778	12571.	37615.	50186.
185.	10.048	0.997	19.41	-23.287	-2490.	20.15	36.208	82.883	119.091	12919.	37357.	50276.
190.	11.226	0.992	19.09	-23.061	-2370.	20.24	36.962	81.454	118.417	13267.	37094.	50361.
195.	12.510	0.988	18.75	-22.842	-2251.	20.34	37.710	80.045	117.755	13616.	36825.	50441.

200.	13.407	0.983	18.37	-30.992	-6586.	20.43	38.451	78.554	117.105	13956.	36550.	50516.
205.	15.621	0.978	17.06	-31.775	-6380.	20.53	39.186	77.279	116.865	14317.	36269.	50385.
210.	17.061	0.973	17.51	-32.550	-7396.	20.64	39.817	75.918	115.835	14670.	35860.	50250.
215.	18.632	0.968	17.05	-33.306	-7797.	20.74	40.644	75.570	115.214	15024.	35484.	50108.
220.	20.745	0.964	16.50	-34.030	-8188.	20.85	41.567	73.253	114.600	15381.	35179.	50061.
225.	22.799	0.958	15.92	-34.708	-8561.	20.96	42.089	71.906	113.995	15741.	35066.	50007.
230.	25.009	0.953	15.30	-35.320	-8906.	21.07	42.809	70.586	113.395	16104.	34743.	50087.
235.	27.380	0.948	14.62	-35.849	-9213.	21.19	43.530	69.272	112.802	16472.	34409.	50080.
240.	29.919	0.943	13.88	-36.271	-9471.	21.30	44.252	67.961	112.213	16843.	34063.	50007.
245.	32.635	0.938	13.07	-36.560	-9663.	21.43	44.978	66.651	111.629	17221.	33705.	50926.
250.	35.535	0.932	12.19	-36.686	-9775.	21.55	45.708	65.340	111.048	17605.	33333.	50938.
255.	38.628	0.927	11.24	-36.614	-9785.	21.68	46.445	64.024	110.469	17996.	32945.	50941.
260.	41.922	0.921	10.19	-36.304	-9670.	21.81	47.191	62.701	109.893	18397.	32540.	50937.
265.	45.425	0.915	9.05	-35.707	-9404.	21.94	47.940	61.368	109.317	18807.	32117.	50924.
270.	49.147	0.910	7.80	-34.769	-8953.	22.08	48.722	60.020	108.741	19230.	31672.	50902.
275.	53.096	0.904	6.44	-33.425	-8278.	22.23	49.513	58.652	108.165	19668.	31204.	50871.
280.	57.281	0.898	4.94	-31.596	-7333.	22.37	50.326	57.261	107.587	20132.	30709.	50840.
285.	61.712	0.892	3.29	-30.190	-6062.	22.52	51.168	55.860	107.007	20595.	30184.	50779.
290.	66.590	0.886	1.48	-26.097	-4396.	22.68	52.042	54.382	106.424	21093.	29625.	50718.
295.	71.552	0.879	-0.52	-22.182	-2258.	22.84	52.958	52.880	105.837	21618.	29077.	50645.
300.	76.581	0.873	-2.73	-17.284	457.	23.01	53.923	51.323	105.246	22177.	28584.	50561.
305.	(82.096)	0.867	-5.18	(-11.204)	(3872.)	23.18	(54.948)	(49.701)	(104.649)	(22775.)	(27889.)	(50464.)
310.	(87.910)	0.860	-7.89	(-3.695)	(8150.)	23.36	(56.047)	(47.999)	(104.045)	(23422.)	(26933.)	(50356.)
315.	(94.034)	0.853	-10.92	(5.548)	(13453.)	23.55	(57.235)	(46.200)	(103.435)	(24128.)	(26106.)	(50234.)
320.	(100.479)	0.846	-14.30	(16.910)	(20056.)	23.74	(58.533)	(44.283)	(102.816)	(24905.)	(25194.)	(50099.)
325.	(107.258)	0.839	-18.09	(30.883)	(28263.)	23.95	(59.968)	(42.221)	(102.189)	(25770.)	(24180.)	(49950.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 10. NaCl concentration: 3.0195 mol/kg H ₂ O				15.00 wt percent			5.159 mol percent					
t (°C)	P (bars)	d ^L (g cm ⁻³)	$\frac{\bar{V}_L}{3}$ (cm ³ mol ⁻¹)	$\frac{\bar{S}_L}{3}$ (J mol ⁻¹ K ⁻¹)	$\frac{\bar{H}_L}{3}$ (J mol ⁻¹)	$\frac{\bar{V}_L}{3}$ (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G (J mol ⁻¹ K ⁻¹)	H ^L (J mol ⁻¹)	ΔH (J mol ⁻¹)	H ^G (J mol ⁻¹)
80.	9.423	1.078	22.05	-30.098	-5133.	18.65	17.528	120.557	138.085	5406.	42233.	47639.
85.	0.516	1.075	22.03	-29.741	-5021.	18.70	18.538	118.531	136.869	5765.	42026.	47791.
90.	0.626	1.072	22.00	-29.370	-4903.	18.75	19.538	116.159	135.696	6124.	41817.	47941.
95.	0.755	1.069	21.97	-28.990	-4789.	18.81	20.527	114.037	134.564	6485.	41604.	48083.
100.	0.905	1.065	21.93	-28.602	-4652.	18.87	21.506	111.964	133.470	6848.	41388.	48236.
105.	1.079	1.062	21.88	-28.208	-4521.	18.93	22.472	109.902	132.413	7210.	41170.	48380.
110.	1.280	1.059	21.83	-27.807	-4385.	18.99	23.425	107.865	131.380	7572.	40950.	48522.
115.	1.511	1.055	21.76	-27.415	-4250.	19.05	24.424	105.776	130.400	8033.	40629.	48661.
120.	1.774	1.051	21.69	-27.067	-4127.	19.12	25.525	103.515	129.440	8384.	40414.	48798.
125.	2.074	1.048	21.61	-26.761	-4023.	19.19	26.414	102.096	128.510	8735.	40197.	48932.
130.	2.414	1.044	21.51	-26.502	-3939.	19.26	27.269	100.517	127.607	9086.	39978.	49064.
135.	2.798	1.040	21.41	-26.289	-3875.	19.33	28.153	98.577	126.730	9436.	39756.	49192.
140.	3.229	1.036	21.29	-26.024	-3824.	19.40	29.004	96.873	125.877	9785.	39532.	49317.
145.	3.713	1.032	21.15	-25.002	-3715.	19.48	29.844	95.204	125.048	10134.	39305.	49453.
150.	4.254	1.028	21.01	-24.441	-3619.	19.55	30.672	93.562	124.240	10482.	39076.	49558.
155.	4.856	1.024	20.84	-24.022	-3546.	19.63	31.489	91.964	123.453	10830.	38843.	49672.
160.	5.524	1.020	20.66	-23.450	-3477.	19.71	32.296	90.390	122.685	11177.	38606.	49783.
165.	6.263	1.015	20.46	-22.823	-3407.	19.80	33.092	88.843	121.936	11521.	38366.	49891.
170.	7.079	1.011	20.24	-22.538	-3347.	19.88	33.887	87.324	121.204	11872.	38122.	49994.
175.	7.976	1.007	20.00	-22.233	-3285.	19.97	34.657	85.530	120.487	12213.	37874.	50097.
180.	8.961	1.002	19.74	-22.583	-3223.	20.06	35.427	84.359	119.786	12566.	37621.	50187.
185.	10.040	0.998	19.45	-22.704	-3179.	20.15	36.188	82.711	119.099	12913.	37364.	50277.
190.	11.217	0.993	19.14	-22.950	-3141.	20.24	36.942	81.484	118.425	13261.	37101.	50362.
195.	12.501	0.988	18.80	-23.214	-3115.	20.34	37.689	80.075	117.764	13610.	36832.	50442.

200.	13.895	0.984	18.42	-30.990	-6532.	20.43	32.429	78.684	117.113	13860.	36557.	50317.
205.	15.409	0.979	18.01	-31.768	-6934.	20.53	39.164	77.310	116.474	14311.	36276.	50387.
210.	17.047	0.974	17.57	-32.538	-7337.	20.64	39.894	75.950	115.844	14663.	35988.	50651.
215.	18.817	0.969	17.09	-33.289	-7736.	20.74	40.621	74.602	115.223	15017.	35692.	50710.
220.	20.726	0.964	16.56	-34.008	-8125.	20.85	41.344	73.266	114.610	15374.	35388.	50762.
225.	22.781	0.959	16.06	-34.679	-8495.	20.96	42.065	71.940	114.005	15734.	35075.	50809.
230.	24.983	0.954	15.57	-35.286	-8837.	21.07	42.785	70.621	113.405	16097.	34752.	50849.
235.	27.358	0.949	15.09	-35.899	-9141.	21.18	43.505	69.307	112.812	16464.	34419.	50883.
240.	29.895	0.944	14.69	-36.224	-9395.	21.30	44.227	67.957	112.224	16836.	34074.	50903.
245.	32.609	0.938	13.15	-36.566	-9685.	21.42	44.952	66.687	111.640	17213.	33716.	50929.
250.	35.507	0.933	12.28	-36.925	-9992.	21.55	45.682	65.377	111.059	17597.	33344.	50940.
255.	38.597	0.927	11.33	-37.296	-10308.	21.67	46.419	64.062	110.481	17988.	32937.	50940.
260.	41.880	0.922	10.23	-37.677	-10630.	21.81	47.165	62.753	109.904	18388.	32532.	50940.
265.	45.369	0.916	9.15	-38.062	-10958.	21.94	47.923	61.406	109.329	18799.	32123.	50928.
270.	49.108	0.910	7.91	-38.466	-11292.	22.08	48.696	60.058	108.754	19222.	31694.	50906.
275.	53.053	0.905	6.55	-38.881	-11632.	22.22	49.487	58.691	108.178	19659.	31216.	50875.
280.	57.235	0.899	5.06	-39.307	-11977.	22.37	50.301	57.300	107.601	20113.	30721.	50835.
285.	61.693	0.893	3.42	-39.744	-12327.	22.52	51.143	55.878	107.021	20588.	30196.	50784.
290.	66.346	0.887	1.62	-40.192	-12682.	22.67	52.019	54.420	106.439	21086.	29637.	50723.
295.	71.295	0.880	-0.37	-40.653	-13042.	22.83	52.936	52.917	105.853	21611.	29039.	50651.
300.	76.519	0.874	-2.57	-41.127	-13407.	23.00	53.902	51.359	105.261	22171.	28396.	50567.
305.	(82.030)	0.868	-5.00	(-41.619)	(-13777.)	23.17	(54.929)	(49.736)	(104.665)	(22771.)	(27700.)	(50471.)
310.	(87.839)	0.861	-7.71	(-42.122)	(-14152.)	23.35	(56.030)	(48.032)	(104.062)	(23419.)	(26944.)	(50363.)
315.	(93.958)	0.854	-10.72	(-42.635)	(-14532.)	23.53	(57.222)	(46.231)	(103.452)	(24126.)	(26116.)	(50242.)
320.	(100.397)	0.847	-14.08	(-43.158)	(-14917.)	23.73	(58.524)	(44.311)	(102.835)	(24905.)	(25202.)	(50107.)
325.	(107.171)	0.840	-17.85	(-43.696)	(-15307.)	23.93	(59.964)	(42.295)	(102.209)	(25774.)	(24185.)	(49959.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 11. NaCl concentration:				3.5000 mol/kg H ₂ O				16.98 wt percent				5.931 mol percent			
t	P	d ^L	$\frac{\bar{V}^L}{g}$	$\frac{\bar{S}^L}{J mol^{-1} K^{-1}}$	$\frac{\bar{H}_g}{J mol^{-1}}$	$\frac{V^L}{cm^3 mol^{-1}}$	$\frac{S^L}{J mol^{-1} K^{-1}}$	ΔS	$\frac{S^G}{J mol^{-1} K^{-1}}$	H ^L	ΔH	H ^G			
(°C)	(bars)	(g cm ⁻³)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)			
80.	0.414	1.093	22.37	-32.307	-4812.	18.68	17.122	121.143	138.265	5322.	42320.	47642.			
85.	0.506	1.090	22.37	-31.868	-4671.	18.73	18.129	118.920	137.049	5679.	42115.	47794.			
90.	0.613	1.087	22.36	-31.414	-4524.	18.78	19.126	116.751	135.877	6038.	41507.	47985.			
95.	0.740	1.084	22.35	-30.948	-4370.	18.84	20.113	114.632	134.745	6398.	41595.	48093.			
100.	0.887	1.080	22.34	-30.473	-4210.	18.89	21.090	112.561	133.651	6759.	41881.	48240.			
105.	1.057	1.077	22.32	-29.989	-4048.	18.95	22.054	110.541	132.595	7121.	41504.	48385.			
110.	1.254	1.074	22.29	-29.495	-3874.	19.01	23.006	108.567	131.573	7482.	41045.	48527.			
115.	1.480	1.070	22.26	-28.992	-3721.	19.08	24.255	106.328	130.583	7962.	40706.	48668.			
120.	1.738	1.066	22.21	-28.468	-3569.	19.14	25.150	104.475	129.625	8311.	40495.	48805.			
125.	2.032	1.063	22.16	-27.886	-3435.	19.21	26.031	102.664	128.695	8659.	40282.	48943.			
130.	2.365	1.059	22.10	-27.247	-3315.	19.28	26.900	100.893	127.793	9006.	40066.	49073.			
135.	2.742	1.055	22.03	-26.554	-3204.	19.35	27.756	99.162	126.918	9353.	39849.	49202.			
140.	3.165	1.051	21.94	-24.807	-3149.	19.42	28.599	97.468	126.067	9699.	39630.	49328.			
145.	3.639	1.047	21.85	-24.908	-3296.	19.49	29.430	95.808	125.239	10044.	39408.	49451.			
150.	4.169	1.043	21.74	-25.256	-3464.	19.57	30.250	94.183	124.433	10388.	39183.	49571.			
155.	4.759	1.039	21.62	-25.650	-3655.	19.65	31.058	92.590	123.648	10732.	38955.	49687.			
160.	5.414	1.035	21.48	-26.088	-3868.	19.72	31.856	91.027	122.883	11075.	38725.	49800.			
165.	6.119	1.031	21.32	-26.570	-4103.	19.80	32.643	89.492	122.135	11418.	38491.	49909.			
170.	6.910	1.026	21.15	-27.093	-4359.	19.89	33.420	87.985	121.406	11760.	38253.	50014.			
175.	7.819	1.022	20.96	-27.653	-4633.	19.97	34.188	86.504	120.692	12103.	38012.	50114.			
180.	8.785	1.018	20.74	-28.245	-4922.	20.06	34.947	85.047	119.994	12445.	37766.	50211.			
185.	9.842	1.013	20.51	-28.866	-5240.	20.15	35.698	83.612	119.310	12787.	37515.	50303.			
190.	10.987	1.009	20.28	-29.510	-5566.	20.24	36.440	82.199	118.639	13130.	37260.	50390.			
195.	12.236	1.004	19.97	-30.169	-5903.	20.33	37.176	80.805	117.981	13473.	36999.	50473.			

200.	13.624	1.000	19.65	-30.836	-5240.	20.42	37.906	79.429	117.334	13817.	35733.	50550.
205.	13.108	0.995	19.51	-31.502	-5598.	20.52	38.630	78.069	116.699	14183.	36460.	50623.
210.	16.714	0.990	18.93	-32.157	-5946.	20.62	39.349	76.724	116.073	14509.	36181.	50690.
215.	18.450	0.985	18.52	-32.789	-6288.	20.72	40.065	75.392	115.457	14858.	35894.	50752.
220.	20.322	0.981	18.07	-33.384	-6616.	20.82	40.777	74.071	114.849	15209.	35598.	50808.
225.	22.337	0.976	17.58	-33.926	-6923.	20.92	41.489	72.760	114.248	15504.	35298.	50858.
230.	24.502	0.971	17.04	-34.399	-7199.	21.03	42.199	71.455	113.655	15921.	34980.	50902.
235.	26.825	0.966	16.46	-34.782	-7453.	21.14	42.911	70.156	113.067	16284.	34656.	50940.
240.	29.314	0.961	15.81	-35.051	-7613.	21.25	43.625	68.860	112.485	16651.	34320.	50971.
245.	31.975	0.955	15.11	-35.179	-7724.	21.36	44.344	67.564	111.908	17024.	33971.	50995.
250.	34.816	0.950	14.35	-35.136	-7748.	21.48	45.069	66.265	111.334	17405.	33607.	51012.
255.	37.846	0.945	13.51	-34.885	-7664.	21.60	45.802	64.961	110.763	17794.	33227.	51021.
260.	41.073	0.940	12.60	-34.385	-7450.	21.72	46.547	63.648	110.195	18193.	32830.	51023.
265.	44.505	0.934	11.60	-33.586	-7075.	21.85	47.306	62.322	109.629	18603.	32413.	51016.
270.	48.151	0.929	10.50	-32.432	-6597.	21.97	48.083	60.975	109.063	19028.	31974.	51001.
275.	52.019	0.924	9.29	-30.854	-5706.	22.10	48.882	59.614	108.497	19469.	31509.	50978.
280.	56.119	0.918	7.97	-28.774	-4623.	22.24	49.709	58.222	107.930	19929.	31016.	50945.
285.	60.459	0.912	6.52	-26.095	-3201.	22.37	50.568	56.794	107.362	20412.	30491.	50903.
290.	65.049	0.907	4.92	-22.704	-1370.	22.51	51.467	55.325	106.792	20922.	29928.	50850.
295.	69.900	0.901	3.16	-18.462	954.	22.66	52.415	53.804	106.219	21464.	29323.	50787.
300.	75.020	0.895	1.22	-13.203	3876.	22.81	53.421	52.221	105.642	22045.	28668.	50714.
305.	(80.420)	0.889	-0.94	(-6.719)	(7523.)	22.96	(54.479)	(50.562)	(105.060)	(22673.)	(27956.)	(50629.)
310.	(86.112)	0.883	-3.32	(1.241)	(12053.)	23.11	(55.633)	(48.811)	(104.474)	(23357.)	(27176.)	(50532.)
315.	(92.136)	0.877	-5.87	(10.996)	(17667.)	23.28	(56.933)	(46.948)	(103.881)	(24109.)	(26315.)	(50426.)
320.	(98.415)	0.871	-8.92	(22.944)	(24618.)	23.44	(58.354)	(44.947)	(103.282)	(24985.)	(25358.)	(50303.)
325.	(105.049)	0.864	-12.19	(37.594)	(33229.)	23.61	(59.897)	(42.779)	(102.675)	(25885.)	(24284.)	(50169.)

Nore.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 12.		NaCl concentration:		4.0000 mol/kg H ₂ O				18.95 wt percent				6.722 mol percent			
t	P	d ^L	$\frac{\bar{V}^L}{\text{cm}^3 \text{mol}^{-1}}$	$\frac{\bar{S}_a^L}{\text{J mol}^{-1} \text{K}^{-1}}$	$\frac{\bar{H}_a^L}{\text{J mol}^{-1}}$	$\frac{\bar{V}^L}{\text{cm}^3 \text{mol}^{-1}}$	$\frac{\bar{S}^L}{\text{J mol}^{-1} \text{K}^{-1}}$	ΔS	$\frac{\bar{S}^G}{\text{J mol}^{-1} \text{K}^{-1}}$	$\frac{\bar{H}^L}{\text{J mol}^{-1}}$	ΔH	$\frac{\bar{H}^G}{\text{J mol}^{-1}}$			
(°C)	(bars)	(g cm ⁻³)													
80.	0.405	1.108	22.68	-34.140	-4415.	18.71	16.682	121.780	138.462	5336.	42409.	47645.			
85.	0.494	1.105	22.70	-33.624	-4247.	18.76	17.687	119.559	137.246	5592.	42205.	47797.			
90.	0.600	1.102	22.71	-33.092	-4071.	18.81	18.683	117.391	136.074	5950.	41998.	47948.			
95.	0.723	1.099.	22.73	-32.546	-3888.	18.87	19.668	115.274	134.942	6310.	41788.	48098.			
100.	0.867	1.096	22.74	-31.988	-3699.	18.92	20.644	113.204	133.848	6671.	41574.	48245.			
105.	1.034	1.092	22.74	-31.420	-3502.	18.98	21.608	111.184	132.733	7032.	41358.	48390.			
110.	1.226	1.089	22.74	-30.840	-3299.	19.04	22.559	109.211	131.771	7393.	41140.	48534.			
115.	1.448	1.085	22.73	-29.856	-3030.	19.11	23.482	106.912	130.782	7803.	40922.	48675.			
120.	1.700	1.082	22.72	-28.860	-2859.	19.17	24.371	105.072	129.824	8239.	40704.	48813.			
125.	1.988	1.078	22.70	-27.905	-2697.	19.23	25.227	103.268	128.835	8585.	40564.	48943.			
130.	2.314	1.074	22.67	-26.993	-2452.	19.30	26.049	101.505	127.994	8929.	40453.	49082.			
135.	2.682	1.070	22.63	-25.125	-2226.	19.37	26.838	99.782	127.120	9273.	39940.	49213.			
140.	3.097	1.066	22.58	-23.303	-1941.	19.44	27.594	98.090	126.270	9616.	39724.	49340.			
145.	3.561	1.062	22.52	-21.526	-1636.	19.51	28.398	96.446	125.444	9958.	39507.	49464.			
150.	4.080	1.058	22.45	-20.796	-1372.	19.59	29.140	94.830	124.639	10298.	39287.	49585.			
155.	4.658	1.054	22.37	-20.110	-1103.	19.66	30.610	93.246	123.856	10638.	39065.	49703.			
160.	5.300	1.050	22.27	-26.467	-830.	19.74	31.399	91.694	123.092	10978.	38839.	49817.			
165.	6.009	1.046	22.16	-26.866	-557.	19.82	32.177	90.170	122.347	11316.	38611.	49928.			
170.	6.793	1.042	22.03	-27.304	-282.	19.90	32.945	88.675	121.620	11655.	38380.	50034.			
175.	7.655	1.037	21.88	-27.777	266.	19.98	33.704	87.205	120.909	11992.	38144.	50137.			
180.	8.601	1.033	21.72	-28.282	1219.	20.07	34.453	85.760	120.213	12330.	37905.	50235.			
185.	9.637	1.029	21.54	-28.812	3090.	20.15	35.194	84.338	119.532	12667.	37662.	50329.			
190.	10.768	1.024	21.33	-29.363	5373.	20.24	35.927	82.938	118.864	13049.	37414.	50419.			
195.	12.001	1.020	21.10	-29.927	8167.	20.33	36.652	81.557	118.209	13343.	37161.	50504.			

200.	13.341	1.015	20.85	-30.497	-3067.	20.42	37.372	80.195	117.567	13682.	36902.	50584.
205.	14.795	1.011	20.57	-31.062	-4269.	20.51	38.086	78.849	116.935	14022.	36637.	50660.
210.	16.369	1.006	20.26	-31.614	-4568.	20.61	38.795	77.518	116.313	14364.	36366.	50730.
215.	18.074	1.001	19.91	-32.138	-4858.	20.70	39.501	76.200	115.701	14708.	36087.	50795.
220.	19.904	0.997	19.54	-32.622	-5133.	20.80	40.204	74.893	115.097	15054.	35800.	50854.
225.	21.879	0.992	19.12	-33.050	-5483.	20.80	40.906	73.595	114.502	15407.	35505.	50908.
230.	24.001	0.987	18.67	-33.405	-5800.	21.00	41.609	72.305	113.915	15756.	35209.	50956.
235.	26.277	0.982	18.17	-33.661	-6111.	21.11	42.313	71.018	113.332	16114.	34883.	50997.
240.	28.715	0.977	17.62	-33.799	-6415.	21.21	43.021	69.735	112.755	16478.	34555.	51035.
245.	31.323	0.972	17.02	-33.791	-6726.	21.32	43.734	68.450	112.184	16848.	34214.	51062.
250.	34.107	0.967	16.35	-33.603	-7035.	21.43	44.456	67.162	111.618	17226.	33858.	51084.
255.	37.076	0.962	15.63	-33.200	-7342.	21.54	45.187	65.867	111.054	17613.	33485.	51098.
260.	40.238	0.957	14.84	-32.538	-7642.	21.65	45.933	64.561	110.494	18012.	33094.	51106.
265.	43.601	0.952	13.96	-31.567	-7946.	21.77	46.695	63.240	109.936	18424.	32682.	51105.
270.	47.173	0.947	13.01	-30.228	-8249.	21.89	47.479	61.900	109.379	18851.	32246.	51097.
275.	50.963	0.942	11.96	-28.452	-8569.	22.01	48.288	60.534	108.822	19297.	31784.	51080.
280.	54.980	0.937	10.80	-26.158	-8899.	22.13	49.130	59.136	108.266	19764.	31291.	51055.
285.	59.232	0.932	9.53	-23.246	-9238.	22.25	50.009	57.700	107.709	20258.	30763.	51021.
290.	63.729	0.926	8.13	-19.600	-9582.	22.38	50.935	56.215	107.150	20782.	30195.	50977.
295.	68.480	0.921	6.59	-15.079	-9939.	22.51	51.918	54.672	106.590	21343.	29580.	50923.
300.	73.495	0.916	4.89	-9.509	-10307.	22.64	52.968	53.058	106.026	21948.	28911.	50860.
305.	(78.785)	0.910	3.01	(-2.680)	(-10783.)	22.77	(54.101)	(51.352)	(105.459)	(22606.)	(28179.)	(50785.)
310.	(84.359)	0.905	0.93	(5.669)	(-15400.)	22.91	(55.334)	(49.553)	(104.887)	(23329.)	(27371.)	(50700.)
315.	(90.229)	0.900	-1.37	(15.865)	(-21413.)	23.05	(56.691)	(47.620)	(104.311)	(24150.)	(26473.)	(50604.)
320.	(96.406)	0.894	-3.90	(28.319)	(-28664.)	23.19	(58.198)	(45.531)	(103.729)	(25028.)	(25467.)	(50495.)
325.	(102.901)	0.888	-6.70	(43.557)	(-37626.)	23.34	(59.892)	(43.248)	(103.140)	(26045.)	(24330.)	(50375.)

Note.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 13. NaCl concentration:		4.2777 mol/kg H ₂ O				20.00 wt percent				7.155 mol percent			
t	p	d ^L	$\frac{V^L}{a}$	$\frac{S^L}{a}$	$\frac{H^L}{a}$	V ^L	S ^L	ΔS	S ^G	H ^L	ΔH	H ^G	
(°C)	(bars)	(g cm ⁻³)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)		(J mol ⁻¹ K ⁻¹)			(J mol ⁻¹)		
80.	0.400	1.116	22.84	-34.981	-4167.	18.73	16.431	122.145	138.576	5189.	42458.	47646.	
85.	0.488	1.113	22.87	-34.425	-3985.	18.78	17.436	119.924	137.360	5545.	42254.	47799.	
90.	0.592	1.110	22.90	-33.852	-3795.	18.83	18.431	117.757	136.187	5903.	42048.	47950.	
95.	0.714	1.107	22.93	-33.265	-3597.	18.89	19.416	115.640	135.055	6262.	41838.	48100.	
100.	0.856	1.104	22.95	-32.665	-3392.	18.94	20.391	113.570	133.962	6623.	41625.	48248.	
105.	1.021	1.100	22.97	-32.053	-3179.	19.00	21.356	111.550	132.906	6984.	41410.	48393.	
110.	1.211	1.097	22.98	-31.429	-2959.	19.06	22.307	109.577	131.884	7345.	41192.	48537.	
115.	1.429	1.093	22.99	-30.794	-2734.	19.12	23.241	107.641	130.895	7855.	40822.	48678.	
120.	1.679	1.090	22.99	-25.772	-652.	19.19	24.157	105.611	129.938	8202.	40616.	48817.	
125.	1.963	1.086	22.98	-25.280	-675.	19.25	25.059	103.610	129.009	8546.	40408.	48954.	
130.	2.285	1.082	22.97	-25.331	-715.	19.32	26.258	101.851	128.109	8889.	40199.	49088.	
135.	2.649	1.078	22.95	-25.425	-775.	19.39	27.104	100.131	127.235	9231.	39987.	49219.	
140.	3.059	1.075	22.92	-25.565	-854.	19.46	27.936	98.449	126.386	9572.	39774.	49347.	
145.	3.518	1.071	22.88	-25.749	-953.	19.53	28.756	96.803	125.560	9912.	39559.	49472.	
150.	4.031	1.067	22.82	-25.979	-1073.	19.60	29.564	95.192	124.756	10251.	39342.	49593.	
155.	4.602	1.062	22.76	-26.253	-1213.	19.68	30.360	93.613	123.974	10590.	39122.	49712.	
160.	5.236	1.058	22.69	-26.570	-1356.	19.75	31.145	92.066	123.211	10927.	38900.	49827.	
165.	5.937	1.054	22.60	-26.927	-1506.	19.83	31.919	90.548	122.467	11263.	38675.	49938.	
170.	6.712	1.050	22.49	-27.323	-1756.	19.91	32.682	89.058	121.740	11599.	38446.	50046.	
175.	7.564	1.046	22.37	-27.753	-1975.	19.99	33.436	87.593	121.031	11935.	38214.	50169.	
180.	8.499	1.041	22.23	-28.214	-2211.	20.08	34.180	86.156	120.336	12270.	37979.	50295.	
185.	9.523	1.037	22.08	-28.700	-2461.	20.16	34.916	84.740	119.656	12605.	37759.	50344.	
190.	10.642	1.033	21.90	-29.205	-2724.	20.25	35.644	83.347	118.990	12940.	37495.	50435.	
195.	11.861	1.028	21.70	-29.722	-2996.	20.34	36.364	81.973	118.337	13276.	37245.	50521.	

200.	13.186	1.024	21.48	-30.244	-3274.	20.42	37.079	80.617	117.696	13612.	36991.	50603.
205.	14.623	1.019	21.23	-30.760	-3553.	20.52	37.788	79.278	117.066	13950.	36730.	50680.
210.	16.179	1.015	20.96	-31.261	-3828.	20.61	38.492	77.955	116.446	14289.	36463.	50752.
215.	17.861	1.010	20.65	-31.733	-4093.	20.70	39.193	76.644	115.836	14630.	36188.	50818.
220.	19.675	1.005	20.31	-32.163	-4341.	20.80	39.891	75.344	115.235	14973.	35906.	50879.
225.	21.627	1.001	19.94	-32.534	-4564.	20.90	40.589	74.053	114.642	15320.	35615.	50935.
230.	23.725	0.996	19.53	-32.829	-4751.	20.99	41.288	72.769	114.057	15671.	35314.	50985.
235.	25.976	0.991	19.07	-33.026	-4893.	21.10	41.988	71.489	113.478	16027.	35002.	51029.
240.	28.387	0.986	18.57	-33.100	-4974.	21.20	42.693	70.211	112.904	16389.	34678.	51067.
245.	30.966	0.981	18.02	-33.025	-4980.	21.30	43.404	68.932	112.337	16757.	34341.	51098.
250.	33.719	0.977	17.41	-32.766	-4893.	21.41	44.124	67.689	111.773	17134.	33988.	51122.
255.	36.658	0.972	16.75	-32.289	-4691.	21.52	44.856	66.358	111.214	17521.	33619.	51160.
260.	39.782	0.967	16.02	-31.597	-4340.	21.63	45.602	65.048	110.657	17920.	33230.	51190.
265.	43.108	0.962	15.22	-30.492	-3838.	21.74	46.367	63.756	110.103	18333.	32821.	51153.
270.	46.660	0.957	14.33	-29.003	-3123.	21.85	47.155	62.386	109.551	18762.	32387.	51118.
275.	50.388	0.952	13.36	-27.190	-2160.	21.96	47.971	61.028	109.000	19211.	31925.	51135.
280.	54.360	0.947	12.29	-24.790	-902.	22.08	48.822	59.627	108.449	19683.	31431.	51114.
285.	58.565	0.942	11.12	-21.764	713.	22.20	49.713	58.184	107.897	20185.	30901.	51084.
290.	63.012	0.937	9.82	-17.993	2756.	22.32	50.655	56.689	107.344	20715.	30329.	51044.
295.	67.710	0.932	8.40	-13.334	5317.	22.44	51.658	55.152	106.790	21287.	29709.	50996.
300.	72.669	0.927	6.83	-7.611	8503.	22.56	52.734	53.500	106.233	21906.	29031.	50937.
305.	(77.899)	0.922	5.09	(-0.611)	(12448.)	22.69	(53.898)	(51.775)	(105.673)	(22582.)	(28286.)	(50868.)
310.	(83.411)	0.916	3.18	(7.931)	(17317.)	22.81	(55.171)	(49.938)	(105.109)	(23327.)	(27462.)	(50789.)
315.	(89.214)	0.911	1.07	(18.347)	(23319.)	22.94	(56.577)	(47.965)	(104.541)	(24156.)	(26542.)	(50699.)
320.	(95.321)	0.906	-1.25	(31.053)	(30720.)	23.07	(58.144)	(45.824)	(103.968)	(25089.)	(2508.)	(50597.)
325.	(101.742)	0.901	-3.80	(46.586)	(39858.)	23.20	(59.913)	(43.476)	(103.389)	(26149.)	(24334.)	(50484.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 14. NaCl concentration: 4.5000 mol/kg H₂O 20.82 wt percent 7.499 mol percent

t (°C)	p (bars)	d ^L (g cm ⁻³)	\bar{V}_g^L (cm ³ mol ⁻¹)	\bar{S}_g^L (J mol ⁻¹ K ⁻¹)	\bar{H}_g^L (J mol ⁻¹)	\bar{V}_L (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L	7.499 mol percent		
											ΔH	H^G	H^G
80.	0.395	1.123	22.96	-35.571	-3955.	18.74	16.227	122.444	138.670	5151.	42496.	47647.	
85.	0.483	1.120	23.01	-34.984	-3762.	18.79	17.231	120.222	137.454	5508.	42293.	47801.	
90.	0.586	1.117	23.04	-34.380	-3561.	18.85	18.226	118.055	136.281	5805.	42087.	47952.	
95.	0.706	1.114	23.08	-33.761	-3351.	18.90	19.211	115.937	135.148	6224.	41878.	48102.	
100.	0.847	1.110	23.11	-33.129	-3134.	18.96	20.187	113.868	134.055	6885.	41685.	48250.	
105.	1.010	1.107	23.14	-32.485	-2909.	19.02	21.154	111.844	132.998	7647.	41449.	48396.	
110.	1.198	1.103	23.16	-31.827	-2677.	19.08	22.103	109.874	131.977	8507.	41232.	48540.	
115.	1.414	1.100	23.18	-25.506	-232.	19.14	23.061	107.527	130.988	9478.	40984.	48681.	
120.	1.662	1.096	23.20	-25.536	-318.	19.20	24.045	105.685	130.031	10572.	40749.	48821.	
125.	1.943	1.092	23.20	-25.517	-320.	19.27	25.115	103.887	129.102	11781.	40524.	48958.	
130.	2.262	1.088	23.20	-25.530	-360.	19.33	26.072	102.130	128.202	13199.	40305.	49093.	
135.	2.623	1.083	23.19	-25.605	-408.	19.40	26.915	100.413	127.328	14809.	40085.	49233.	
140.	3.028	1.081	23.18	-25.715	-475.	19.47	27.745	98.734	126.479	16679.	39813.	49352.	
145.	3.483	1.077	23.15	-25.871	-562.	19.54	28.562	97.092	125.654	18777.	39600.	49477.	
150.	3.991	1.073	23.12	-26.071	-670.	19.62	29.367	95.484	124.851	21215.	39385.	49600.	
155.	4.557	1.069	23.07	-26.315	-798.	19.69	30.160	93.909	124.069	24052.	39167.	49719.	
160.	5.185	1.065	23.01	-26.602	-946.	19.77	30.942	92.365	123.307	27288.	38947.	49834.	
165.	5.880	1.061	22.94	-26.928	-1114.	19.84	31.712	90.851	122.564	30946.	38724.	49946.	
170.	6.647	1.056	22.85	-27.293	-1301.	19.92	32.472	89.366	121.838	35055.	38498.	50055.	
175.	7.491	1.052	22.75	-27.691	-1506.	20.00	33.222	87.907	121.129	39688.	38268.	50159.	
180.	8.418	1.048	22.63	-28.119	-1727.	20.09	33.963	86.473	120.435	44859.	38035.	50259.	
185.	9.432	1.044	22.50	-28.572	-1963.	20.17	34.694	85.062	119.757	50556.	37799.	50356.	
190.	10.541	1.039	22.34	-29.044	-2210.	20.25	35.418	83.673	119.092	57047.	37557.	50447.	
195.	11.748	1.035	22.17	-29.526	-2466.	20.34	36.135	82.305	118.440	64711.	37311.	50535.	

200.	13.061	1.030	21.97	-30.013	-2728.	20.43	36.845	80.954	117.800	13558.	37059.	53618.
205.	14.486	1.026	21.75	-30.493	-2989.	20.52	37.550	79.621	117.171	13894.	36802.	50696.
210.	16.028	1.021	21.50	-30.956	-3247.	20.61	38.251	78.302	116.553	14231.	36538.	50769.
215.	17.695	1.017	21.22	-31.389	-3493.	20.70	38.948	76.997	115.945	14570.	36267.	50837.
220.	19.492	1.012	20.91	-31.779	-3722.	20.80	39.643	75.702	115.345	14918.	35988.	50909.
225.	21.427	1.007	20.57	-32.109	-3924.	20.89	40.338	74.416	114.745	15257.	35700.	50956.
230.	23.507	1.003	20.19	-32.361	-4001.	20.99	41.033	73.137	114.171	15606.	35402.	51008.
235.	25.736	0.998	19.77	-32.513	-4110.	21.09	41.721	71.862	113.623	15967.	35098.	51058.
240.	28.128	0.993	19.31	-32.581	-4267.	21.19	42.404	70.589	113.103	16328.	34773.	51093.
245.	30.683	0.989	18.80	-32.416	-4488.	21.29	43.184	69.314	112.618	16688.	34438.	51126.
250.	33.412	0.984	18.24	-32.106	-4834.	21.39	43.863	68.034	112.167	17068.	34089.	51153.
255.	36.323	0.979	17.62	-31.573	-5004.	21.50	44.594	66.746	111.740	17451.	33722.	51173.
260.	39.422	0.974	16.94	-30.774	-5351.	21.61	45.342	65.445	111.340	17850.	33335.	51185.
265.	42.718	0.969	16.19	-29.657	-5887.	21.71	46.109	64.127	110.936	18264.	32927.	51191.
270.	46.220	0.964	15.36	-28.161	-6236.	21.82	46.901	62.786	109.687	18695.	32532.	51193.
275.	49.935	0.960	14.45	-26.216	-6724.	21.93	47.723	61.417	109.139	19146.	32032.	51178.
280.	53.872	0.955	13.45	-23.739	-67.	22.05	48.580	60.012	108.592	19622.	31538.	51160.
285.	58.040	0.950	12.35	-20.628	-1728.	22.16	49.482	58.563	108.045	20127.	31006.	51133.
290.	62.447	0.945	11.14	-16.765	-3824.	22.27	50.437	57.060	107.497	20667.	30430.	51097.
295.	67.104	0.940	9.81	-12.003	-6443.	22.39	51.456	55.491	106.947	21247.	29804.	51052.
300.	72.020	0.935	8.33	-6.166	-9694.	22.51	52.553	53.842	106.396	21878.	29119.	50937.
305.	(77.203)	0.930	6.71	(0.961)	(13712.)	22.62	(53.744)	(52.097)	(105.841)	(22568.)	(28364.)	(50933.)
310.	(82.666)	0.925	4.93	(9.648)	(18665.)	22.74	(55.049)	(50.231)	(105.283)	(23332.)	(27526.)	(50858.)
315.	(88.418)	0.921	2.96	(20.223)	(24764.)	22.86	(56.494)	(48.221)	(104.721)	(24181.)	(26589.)	(50772.)
320.	(94.470)	0.916	0.81	(33.121)	(32277.)	22.99	(58.111)	(46.044)	(104.154)	(25144.)	(25531.)	(50676.)
325.	(100.834)	0.911	-1.55	(48.878)	(41548.)	23.11	(59.940)	(43.643)	(103.583)	(26240.)	(24328.)	(50568.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 15. NaCl concentration:				5.0000 mol/kg H ₂ O				22.61 wt percent				8.263 mol percent			
t	p	ρ	\bar{V}_a	\bar{S}_a	\bar{H}_a	\bar{V}_L	S^L	ΔS	S^G	H^L	ΔH	H^G			
(°C)	(bars)	(g cm ⁻³)	(cm ³ mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)			(J mol ⁻¹)				
80.	0.385	1.137	23.24	23.24	-36.649	-3432.	18.78	15.757	123.133	138.891	5067.	42583.			
85.	0.470	1.134	23.30	23.30	-35.997	-3216.	18.83	16.762	120.911	137.673	5424.	42380.			
90.	0.571	1.131	23.36	23.36	-35.326	-2991.	18.88	17.757	118.742	136.499	5781.	42175.			
95.	0.689	1.128	23.41	23.41	-34.641	-2757.	18.94	18.742	116.624	135.366	6140.	41966.			
100.	0.826	1.124	23.47	23.47	-33.941	-2515.	18.99	19.718	114.553	134.271	6501.	41754.			
105.	0.986	1.121	23.52	23.52	-33.228	-2265.	19.05	20.686	112.528	133.214	6863.	41538.			
110.	1.169	1.117	23.56	23.56	-32.500	-2006.	19.11	21.637	110.555	132.192	7224.	41322.			
115.	1.381	1.114	23.61	23.61	-31.761	-1742.	19.17	22.572	108.582	131.203	7586.	41106.			
120.	1.622	1.110	23.65	23.65	-31.014	-1474.	19.24	23.491	106.614	130.245	7948.	40890.			
125.	1.898	1.106	23.68	23.68	-29.856	-1199.	19.30	24.397	104.650	129.317	8310.	40674.			
130.	2.210	1.103	23.71	23.71	-28.821	-924.	19.37	25.297	102.688	128.417	8672.	40458.			
135.	2.562	1.099	23.73	23.73	-27.828	-649.	19.43	26.187	101.057	127.543	9034.	40242.			
140.	2.959	1.095	23.74	23.74	-26.880	-374.	19.50	27.067	99.384	126.695	9396.	40026.			
145.	3.404	1.091	23.75	23.75	-25.976	-331.	19.57	27.941	97.748	125.870	9802.	39809.			
150.	3.901	1.087	23.75	23.75	-25.116	-249.	19.65	28.821	96.146	125.068	10137.	39677.			
155.	4.454	1.083	23.73	23.73	-24.299	-146.	19.72	29.708	94.579	124.287	10470.	39524.			
160.	5.069	1.079	23.71	23.71	-23.524	-24.	19.80	30.543	93.043	123.526	10803.	39348.			
165.	5.750	1.075	23.68	23.68	-22.789	-117.	19.87	31.406	91.538	122.784	11135.	39165.			
170.	6.501	1.070	23.63	23.63	-22.091	-277.	19.95	32.267	90.069	122.059	11465.	38980.			
175.	7.328	1.066	23.57	23.57	-21.426	-456.	20.03	33.121	88.611	121.352	11795.	38800.			
180.	8.235	1.062	23.50	23.50	-20.789	-646.	20.11	33.971	87.187	120.660	12125.	38580.			
185.	9.223	1.058	23.41	23.41	-20.176	-854.	20.19	34.817	85.786	119.983	12454.	38158.			
190.	10.315	1.053	23.30	23.30	-19.580	-1069.	20.28	35.661	84.408	119.321	12783.	37927.			
195.	11.498	1.049	23.18	23.18	-18.994	-1294.	20.36	36.522	83.049	118.671	13113.	37452.			

200.	12.785	1.044	23.03	-29.410	-1522.	20.45	36.324	81.710	118.034	13483.	37208.	50650.
205.	14.181	1.040	22.86	-29.818	-1751.	20.53	37.020	80.387	117.008	13774.	36957.	50731.
210.	15.692	1.036	22.67	-30.207	-1973.	20.62	37.713	79.080	116.793	14107.	36700.	50807.
215.	17.326	1.031	22.46	-30.565	-2183.	20.71	38.402	77.785	116.188	14442.	36436.	50878.
220.	19.088	1.027	22.21	-30.876	-2373.	20.80	39.090	76.501	115.592	14779.	36164.	50943.
225.	20.985	1.022	21.94	-31.125	-2536.	20.90	39.778	75.226	115.004	15121.	35883.	51004.
230.	23.023	1.017	21.63	-31.292	-2660.	20.99	40.467	73.957	114.425	15466.	35592.	51059.
235.	25.211	1.013	21.29	-31.356	-2735.	21.08	41.160	72.692	113.852	15817.	35290.	51108.
240.	27.554	1.008	20.91	-31.291	-2766.	21.18	41.859	71.427	113.286	16175.	34976.	51151.
245.	30.060	1.004	20.49	-31.070	-2777.	21.28	42.566	70.160	112.726	16541.	34648.	51188.
250.	32.736	0.999	20.02	-30.657	-2511.	21.38	43.284	68.887	112.171	16916.	34303.	51219.
255.	35.590	0.990	19.50	-30.016	-2223.	21.48	44.016	67.605	111.620	17302.	33941.	51284.
260.	38.630	0.980	18.93	-29.102	-1790.	21.58	44.767	66.305	111.072	17703.	33559.	51351.
265.	41.863	0.985	18.29	-27.861	-1180.	21.68	45.540	64.988	110.528	18119.	33153.	51422.
270.	45.297	0.981	17.59	-26.233	-358.	21.78	46.341	63.645	109.986	18554.	32721.	51475.
275.	48.941	0.976	16.82	-24.146	721.	21.88	47.176	62.270	109.446	19012.	32259.	51521.
280.	52.803	0.971	15.97	-21.513	2108.	21.99	48.052	60.855	108.907	19497.	31762.	51559.
285.	56.891	0.967	15.03	-18.233	3863.	22.09	48.978	59.390	108.368	20014.	31224.	51599.
290.	61.214	0.962	13.99	-14.183	6064.	22.19	49.963	57.866	107.830	20570.	30640.	51610.
295.	65.782	0.958	12.85	-9.215	8799.	22.30	51.021	56.269	107.290	21172.	30001.	51173.
300.	70.603	0.953	11.59	-3.149	12182.	22.40	52.166	54.583	106.749	21829.	29208.	51126.
305.	(75.688)	0.949	10.22	(4.237)	(16349.)	22.51	(53.416)	(52.789)	(106.205)	(22552.)	(28518.)	(51070.)
310.	(81.046)	0.944	8.70	(13.217)	(21673.)	22.61	(54.795)	(50.865)	(105.659)	(23357.)	(27647.)	(51005.)
315.	(86.683)	0.940	7.05	(24.135)	(27770.)	22.72	(56.330)	(48.780)	(105.110)	(24251.)	(26668.)	(50929.)
320.	(92.623)	0.936	5.26	(37.410)	(35113.)	22.82	(58.059)	(46.438)	(104.557)	(25237.)	(25556.)	(50843.)
325.	(98.865)	0.932	3.53	(53.630)	(45058.)	22.93	(60.026)	(43.975)	(103.999)	(26463.)	(24283.)	(50746.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

NaCl concentration:			5,500 mol/kg H ₂ O			24.32 wt percent			9.015 mol percent			
t (°C)	P (bars)	d ^L (g cm ⁻³)	$\frac{\bar{V}^L}{a}$ (cm ³ mol ⁻¹)	$\frac{\bar{S}_2^L}{a}$ (J mol ⁻¹ K ⁻¹)	$\frac{\bar{H}_2}{a}$ (J mol ⁻¹)	V ^L (cm ³ mol ⁻¹)	S ^L	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L	ΔH (J mol ⁻¹)	H ^G
80.	0.375	1.151	23.50	-37.408	-2805.	18.82	15.274	123.850	139.125	4984.	42670.	47654.
85.	0.458	1.148	23.57	-36.696	-2608.	18.87	16.280	121.625	137.905	5340.	42468.	47608.
90.	0.556	1.145	23.65	-35.965	-2362.	18.92	17.276	119.454	136.729	5698.	42262.	47560.
95.	0.671	1.142	23.73	-35.219	-2106.	18.97	18.262	117.333	135.595	6057.	42054.	47511.
100.	0.805	1.138	23.80	-34.458	-1841.	19.03	19.239	115.260	134.499	6418.	41842.	47260.
105.	0.961	1.135	23.87	-33.683	-1568.	19.09	20.208	113.232	133.441	6780.	41627.	47010.
110.	1.140	1.131	23.94	-32.892	-1286.	19.15	21.162	111.255	132.418	7142.	41410.	46853.
115.	1.346	1.128	24.01	-32.046	-1000.	19.21	22.034	108.794	131.428	7705.	40990.	46696.
120.	1.583	1.124	24.07	-26.079	1273.	19.27	23.510	106.959	130.469	8046.	40790.	46537.
125.	1.851	1.120	24.13	-25.951	1303.	19.34	24.371	105.169	129.540	8386.	40590.	46375.
130.	2.156	1.116	24.19	-25.664	1317.	19.40	25.219	103.421	128.640	8721.	40387.	46211.
135.	2.501	1.112	24.24	-25.821	1312.	19.47	26.052	101.714	127.766	9061.	40184.	46045.
140.	2.889	1.108	24.28	-25.821	1290.	19.54	26.872	100.045	126.917	9396.	39980.	45876.
145.	3.324	1.104	24.32	-25.866	1248.	19.61	27.678	98.444	126.092	9730.	39774.	45703.
150.	3.810	1.100	24.35	-25.955	1187.	19.68	28.471	96.819	125.290	10062.	39566.	45628.
155.	4.352	1.096	24.37	-26.086	1106.	19.76	29.252	95.258	124.509	10393.	39357.	45450.
160.	4.954	1.092	24.38	-26.259	1006.	19.83	30.020	93.729	123.749	10722.	39146.	45268.
165.	5.620	1.088	24.38	-26.472	887.	19.91	30.771	92.231	123.008	11051.	38933.	45084.
170.	6.355	1.084	24.37	-26.721	750.	19.98	31.523	90.761	122.284	11378.	38717.	44905.
175.	7.165	1.080	24.35	-27.002	597.	20.06	32.258	89.320	121.576	11705.	38498.	44723.
180.	8.054	1.075	24.32	-27.311	428.	20.14	32.983	87.904	120.867	12031.	38276.	44540.
185.	9.027	1.071	24.28	-27.644	247.	20.22	33.700	86.512	120.121	12356.	38051.	44350.
190.	10.091	1.067	24.21	-27.992	55.	20.30	34.408	85.143	119.551	12682.	37821.	44150.
195.	11.251	1.062	24.14	-28.350	-144.	20.39	35.109	83.794	118.903	13007.	37588.	43953.

200.	12.512	1.058	24.04	-28.709	-345.	20.47	35.803	82.465	118.268	1333.	37349.	50682.
205.	13.880	1.054	23.93	-28.088	-546.	20.56	36.492	81.152	111.644	13661.	37105.	50765.
210.	15.362	1.049	23.79	-29.387	-740.	20.64	37.177	79.854	110.051	13989.	36854.	50844.
215.	16.864	1.045	23.63	-29.682	-920.	20.73	37.860	78.569	110.429	14221.	36597.	50917.
220.	18.391	1.040	23.45	-29.930	-1079.	20.82	38.541	77.295	115.836	14654.	36331.	50986.
225.	20.552	1.036	23.24	-30.112	-1209.	20.91	39.223	76.029	115.252	14992.	36057.	51049.
230.	22.551	1.031	23.01	-30.210	-1300.	21.00	39.907	74.769	114.675	15335.	35773.	51107.
235.	24.597	1.027	22.74	-30.202	-1338.	21.09	40.595	73.512	114.107	15683.	35477.	51160.
240.	26.996	1.022	22.44	-30.063	-1311.	21.18	41.290	72.254	113.544	16038.	35168.	51207.
245.	29.455	1.018	22.10	-29.762	-1202.	21.28	41.995	70.993	113.988	16402.	34845.	51248.
250.	32.081	1.013	21.71	-29.266	-992.	21.37	42.713	69.725	113.437	16777.	34506.	51283.
255.	34.882	1.009	21.29	-28.536	-659.	21.47	43.447	68.445	111.891	17164.	34168.	51312.
260.	37.865	1.005	20.82	-27.527	-176.	21.56	44.201	67.148	111.349	17565.	33834.	51334.
265.	41.038	1.000	20.29	-26.185	488.	21.66	44.981	65.829	110.811	17984.	33506.	51359.
270.	44.409	0.996	19.71	-24.447	1370.	21.75	45.793	64.482	110.275	18424.	33178.	51384.
275.	47.986	0.991	19.07	-22.231	2214.	21.85	46.642	63.100	109.741	18890.	32850.	51359.
280.	51.777	0.987	18.35	-19.478	3372.	21.95	47.537	61.672	109.209	19384.	32523.	51353.
285.	55.791	0.983	17.57	-16.055	5807.	22.04	48.487	60.191	108.678	19914.	32196.	51338.
290.	60.035	0.978	16.70	-11.847	8095.	22.14	49.504	58.643	108.147	20487.	31870.	51316.
295.	64.520	0.974	15.74	-6.703	10931.	22.23	50.601	57.015	107.616	21110.	30176.	51286.
300.	69.254	0.970	14.70	-0.439	14426.	22.33	51.794	55.289	107.084	21794.	29453.	51247.
305.	(74.246)	0.966	13.55	(7.170)	(18722.)	22.42	(53.106)	(53.444)	(106.550).	(22552.)	(28647.)	(51198.)
310.	(79.507)	0.962	12.30	(16.405)	(23995.)	22.51	(54.559)	(51.455)	(106.014).	(23399.)	(27742.)	(51141.)
315.	(85.046)	0.958	10.95	(27.616)	(30465.)	22.60	(56.187)	(49.289)	(105.476).	(24355.)	(26719.)	(51074.)
320.	(90.874)	0.954	9.50	(41.245)	(38412.)	22.69	(58.029)	(46.905)	(104.934).	(25447.)	(25551.)	(50997.)
325.	(97.002)	0.951	7.97	(57.862)	(48200.)	22.78	(60.136)	(44.253)	(104.389).	(26705.)	(24205.)	(50911.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 17. NaCl concentration: 5.7036 mol/kg H₂O 25.00 wt percent 9.318 mol percent

t (°C)	P (bars)	d ^L (g cm ⁻³)	\bar{V}_2^L (cm ³ mol ⁻¹)	\bar{S}_2^L (J mol ⁻¹ K ⁻¹)	\bar{H}_2^L (J mol ⁻¹)	\bar{V}^L (cm ³ mol ⁻¹)	S^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S^G (J mol ⁻¹ K ⁻¹)	H ^L (J mol ⁻¹)	ΔH (J mol ⁻¹)	H ^G (J mol ⁻¹)
80.	0.370	1.157	23.60	-37.633	-2589.	18.83	15.074	124.150	139.324	4949.	42706.	47655.
85.	0.553	1.154	23.68	-36.897	-2543.	18.88	15.080	121.924	138.004	5306.	42503.	47809.
90.	0.820	1.150	23.77	-36.185	-2088.	18.94	17.076	119.751	136.827	5664.	42982.	47962.
95.	0.863	1.147	23.85	-35.374	-1824.	18.99	18.063	117.628	135.592	6023.	42090.	48113.
100.	0.796	1.144	23.93	-34.589	-1551.	19.05	19.041	115.554	134.595	6384.	41878.	48262.
105.	0.950	1.140	24.01	-33.791	-1269.	19.11	20.011	113.525	133.536	6747.	41663.	48410.
110.	1.128	1.137	24.09	-32.977	-978.	19.17	20.966	111.546	132.513	7109.	41446.	48555.
115.	1.332	1.133	24.17	-26.257	1563.	19.23	22.461	109.061	131.522	7681.	41018.	48699.
120.	1.566	1.129	24.24	-26.071	1616.	19.29	23.356	107.227	130.563	8021.	40819.	48840.
125.	1.832	1.125	24.31	-25.924	1653.	19.35	24.196	105.438	129.533	8360.	40619.	48979.
130.	2.134	1.122	24.38	-25.819	1674.	19.42	25.042	103.691	128.732	8698.	40418.	49115.
135.	2.476	1.118	24.44	-25.756	1678.	19.49	25.873	101.985	127.858	9033.	40216.	49248.
140.	2.860	1.114	24.49	-25.738	1663.	19.56	26.691	100.318	127.009	9368.	40013.	49386.
145.	3.291	1.110	24.54	-25.764	1629.	19.63	27.495	98.689	126.185	9701.	39808.	49509.
150.	3.773	1.106	24.58	-25.834	1575.	19.70	28.286	97.096	125.382	10032.	39602.	49634.
155.	4.310	1.102	24.62	-25.947	1502.	19.77	29.065	95.537	124.602	10362.	39394.	49756.
160.	4.907	1.098	24.66	-26.102	1410.	19.85	29.831	94.011	123.841	10690.	39185.	49875.
165.	5.567	1.093	24.66	-26.296	1299.	19.92	30.585	92.515	123.100	11018.	38973.	49991.
170.	6.296	1.089	24.67	-26.526	1170.	20.00	31.328	91.049	122.377	11344.	38759.	50103.
175.	7.099	1.085	24.66	-26.788	1025.	20.08	32.060	89.610	121.671	11669.	38543.	50212.
180.	7.980	1.081	24.65	-27.079	865.	20.16	32.783	88.198	120.980	11994.	38323.	50316.
185.	8.946	1.076	24.62	-27.392	692.	20.24	33.496	86.809	120.306	12318.	38100.	50417.
190.	10.001	1.072	24.57	-27.721	509.	20.32	34.202	85.443	119.645	12641.	37873.	50516.
195.	11.151	1.068	24.51	-28.060	319.	20.40	34.899	84.098	118.998	12965.	37641.	50607.

200.	12.401	1.063	24.44	-28.398	127.	20.48	35.591	82.772	118.363	13290.	37405.	50695.
205.	13.750	1.059	24.35	-28.727	-14.	20.57	36.277	81.463	117.740	13616.	37164.	50773.
210.	15.229	1.055	24.23	-29.035	-48.	20.66	36.959	80.169	117.128	13943.	36916.	50858.
215.	16.818	1.050	24.10	-29.309	-418.	20.74	37.639	78.888	116.527	14272.	36661.	50933.
220.	18.532	1.046	23.94	-29.534	-567.	20.83	38.317	77.617	115.935	14605.	36398.	51003.
225.	20.378	1.041	23.76	-29.694	-686.	20.92	38.997	76.355	115.351	14941.	36126.	51067.
230.	22.363	1.037	23.55	-29.769	-764.	21.01	39.678	75.098	114.776	15283.	35844.	51127.
235.	24.402	1.032	23.31	-29.736	-791.	21.10	40.365	73.844	114.209	15630.	35551.	51181.
240.	26.713	1.028	23.04	-29.570	-751.	21.19	41.059	72.589	113.648	15984.	35244.	51229.
245.	29.214	1.024	22.73	-29.242	-628.	21.28	41.763	71.330	113.093	16348.	34924.	51271.
250.	31.820	1.019	22.38	-28.718	-403.	21.37	42.481	70.063	112.544	16722.	34586.	51308.
255.	34.601	1.015	22.00	-27.057	-53.	21.47	43.216	68.784	112.000	17109.	34226.	51358.
260.	37.562	1.010	21.56	-26.915	447.	21.56	43.972	67.488	111.460	17511.	33851.	51362.
265.	40.712	1.006	21.08	-25.537	1139.	21.65	44.755	66.168	110.923	17932.	33448.	51380.
270.	44.058	1.002	20.55	-23.761	2033.	21.75	45.570	64.819	110.389	18374.	33016.	51390.
275.	47.609	0.997	19.95	-21.512	3200.	21.84	46.426	63.453	109.858	18842.	32551.	51393.
280.	51.373	0.993	19.29	-18.703	4683.	21.94	47.328	62.000	109.328	19341.	32048.	51389.
285.	55.357	0.989	18.57	-15.230	6446.	22.03	48.289	60.511	108.800	19876.	31501.	51377.
290.	59.572	0.985	17.77	-10.965	8867.	22.12	49.318	58.953	108.272	20455.	30902.	51357.
295.	64.024	0.981	16.88	-5.757	11738.	22.21	50.432	57.312	107.744	21087.	30242.	51329.
300.	68.725	0.977	15.92	0.578	15274.	22.30	51.646	55.569	107.215	21782.	29511.	51293.
305.	(73.682)	0.973	14.86	(8.270)	(19618.)	22.39	(52.982)	(53.703)	(106.684)	(22554.)	(28694.)	(51248.)
310.	(78.905)	0.969	13.72	(17.590)	(24046.)	22.48	(54.466)	(51.886)	(106.152)	(23119.)	(27775.)	(51194.)
315.	(84.405)	0.965	12.48	(28.018)	(31670.)	22.57	(56.133)	(49.886)	(105.618)	(24397.)	(26733.)	(51150.)
320.	(90.172)	0.962	11.16	(42.676)	(43503.)	22.65	(58.020)	(47.060)	(105.080)	(25315.)	(25544.)	(51057.)
325.	(96.277)	0.958	9.79	(59.446)	(49362.)	22.74	(60.185)	(44.355)	(104.539)	(26808.)	(24166.)	(50973.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 18. NaCl concentration: 6.0000 mol/kg H₂O

Table 18. NaCl concentration:			6.0000 mol/kg H ₂ O			25.96 wt percent			9.755 mol percent			
t	p	d ^L	\bar{v}_a^L	\bar{s}_a^L	\bar{h}_a^L	\bar{v}^L	\bar{s}^L	ΔS	\bar{s}^G	H ^L	ΔH	H ^G
(°C)	(bars)	(g cm ⁻³)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)				(J mol ⁻¹)
80.	0.364	1.165	23.75	-37.876	-2196.	18.85	14.779	124.595	139.374	4899.	42758.	47657.
85.	0.445	1.161	23.84	-37.107	-1940.	18.91	15.786	122.366	138.152	5256.	42556.	47811.
90.	0.540	1.158	23.93	-36.321	-1675.	18.96	16.785	120.191	136.974	5614.	42350.	47964.
95.	0.652	1.155	24.03	-35.520	-1398.	19.01	17.771	118.066	135.837	5974.	42142.	48116.
100.	0.783	1.151	24.12	-34.703	-1113.	19.07	18.750	115.989	134.739	6335.	41930.	48265.
105.	0.935	1.148	24.22	-33.872	-819.	19.13	19.721	113.958	133.679	6698.	41715.	48413.
110.	1.110	1.144	24.31	-33.026	-515.	19.19	20.678	111.976	132.654	7061.	41498.	48559.
115.	1.311	1.141	24.40	-26.205	2064.	19.25	22.207	109.456	131.662	7646.	41057.	48703.
120.	1.542	1.137	24.48	-25.992	2127.	19.31	23.080	107.623	130.702	7985.	40860.	48845.
125.	1.804	1.133	24.57	-25.870	2175.	19.38	23.938	105.834	129.772	8323.	40661.	48984.
130.	2.102	1.129	24.65	-25.689	2206.	19.45	24.781	104.089	128.871	8659.	40462.	49121.
135.	2.439	1.125	24.72	-25.602	2220.	19.51	25.611	102.385	127.996	8994.	40261.	49256.
140.	2.818	1.121	24.80	-25.550	2215.	19.58	26.426	100.721	127.146	9377.	40060.	49387.
145.	3.244	1.117	24.86	-25.560	2191.	19.65	27.227	99.094	126.321	9659.	39857.	49516.
150.	3.719	1.113	24.92	-25.605	2147.	19.72	28.015	97.503	125.519	9989.	39654.	49643.
155.	4.249	1.109	24.97	-25.694	2085.	19.80	28.790	95.947	124.758	10317.	39448.	49766.
160.	4.838	1.105	25.02	-25.824	2003.	19.87	29.553	94.424	123.977	10644.	39241.	49885.
165.	5.490	1.101	25.06	-25.993	1902.	19.95	30.304	92.932	123.236	10970.	39032.	50015.
170.	6.210	1.097	25.08	-26.199	1784.	20.02	31.043	91.470	122.513	11294.	38821.	50152.
175.	7.003	1.092	25.10	-26.437	1650.	20.10	31.771	90.035	121.807	11617.	38607.	50290.
180.	7.873	1.088	25.11	-26.703	1500.	20.18	32.490	88.627	121.117	11940.	38390.	50430.
185.	8.827	1.084	25.10	-26.992	1339.	20.26	33.199	87.243	120.442	12262.	38171.	50532.
190.	9.870	1.080	25.08	-27.296	1167.	20.34	33.900	85.882	119.782	12583.	37947.	50630.
195.	11.006	1.075	25.05	-27.609	989.	20.42	34.593	84.542	119.136	12905.	37719.	50724.

200.	13.242	1.071	25.01	-27.922	808.	20.50	35.281	83.221	118.502	13228.	37486.	50714.
205.	13.584	1.067	24.94	-28.225	629.	20.59	35.962	81.917	117.880	13551.	37248.	50799.
210.	13.937	1.062	24.86	-28.507	458.	20.67	36.641	80.628	117.269	13876.	37004.	50880.
215.	16.608	1.058	24.76	-28.754	301.	20.76	37.316	79.352	116.668	14203.	36752.	50956.
220.	18.303	1.053	24.63	-28.951	165.	20.85	37.991	78.087	116.078	14534.	36493.	51027.
225.	20.129	1.049	24.49	-29.082	61.	20.93	38.667	76.829	115.496	14868.	36225.	51093.
230.	22.091	1.045	24.32	-29.127	-3.	21.02	39.345	75.577	114.922	15208.	35947.	51154.
235.	24.138	1.040	24.12	-29.062	-14.	21.11	40.020	74.326	114.356	15553.	35657.	51210.
240.	26.434	1.036	23.89	-28.866	43.	21.20	40.722	73.075	113.797	15907.	35354.	51260.
245.	28.869	1.031	23.63	-28.501	184.	21.29	41.445	71.819	113.244	16269.	35036.	51305.
250.	31.448	1.027	23.33	-27.939	428.	21.38	42.183	70.555	112.697	16643.	34700.	51344.
255.	34.199	1.023	23.00	-27.139	798.	21.47	42.879	69.277	112.155	17030.	34346.	51376.
260.	37.129	1.018	22.63	-26.054	1321.	21.56	43.638	67.980	111.618	17434.	33969.	51403.
265.	40.246	1.014	22.21	-24.630	2029.	21.65	44.425	66.659	111.084	17856.	33566.	51422.
270.	43.558	1.010	21.74	-22.804	2958.	21.75	45.247	65.306	110.553	18301.	33134.	51435.
275.	47.073	1.006	21.21	-20.501	4155.	21.84	46.110	63.914	110.025	18774.	32668.	51441.
280.	50.798	1.001	20.63	-17.631	5671.	21.93	47.025	62.473	109.498	19278.	32162.	51440.
285.	54.742	0.997	19.99	-14.090	7572.	22.02	48.000	60.973	108.973	19821.	31610.	51432.
290.	58.914	0.993	19.29	-9.750	9935.	22.10	49.049	59.400	108.449	20411.	31004.	51415.
295.	63.322	0.989	18.51	-4.458	12854.	22.19	50.186	57.739	107.925	21056.	30335.	51391.
300.	67.976	0.986	17.66	1.974	16445.	22.28	51.429	55.971	107.400	21767.	29591.	51358.
305.	(72.886)	0.982	16.73	(9.775)	(20852.)	22.36	(52.802)	(54.073)	(106.876)	(22559.)	(28758.)	(51317.)
310.	(78.086)	0.978	15.73	(19.231)	(26854.)	22.44	(54.331)	(52.016)	(106.347)	(23449.)	(2811.)	(51267.)
315.	(83.501)	0.975	14.66	(30.695)	(32875.)	22.52	(56.052)	(49.766)	(105.818)	(24359.)	(26748.)	(51208.)
320.	(89.221)	0.971	13.54	(44.632)	(41003.)	22.60	(58.009)	(47.777)	(105.286)	(25317.)	(25524.)	(51139.)
325.	(95.256)	0.968	12.40	(61.611)	(51008.)	22.68	(60.257)	(44.494)	(104.751)	(26359.)	(24107.)	(51061.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

B58. PRELIMINARY STEAM TABLES FOR NaCl SOLUTIONS

Table 19. NaCl concentration:		6.5000 mol/kg H ₂ O				27.53 wt percent				10.482 mol percent			
t	P	d	$\frac{\bar{V}^L}{3}$	$\frac{\bar{S}^L}{3}$	$\frac{\bar{H}^L}{3}$	$\frac{V^L}{3}$	S ^L	ΔS	S ^G	H ^L	ΔH	H ^G	
(°C)	(bars)	(g cm ⁻³)	(cm mol ⁻³)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	
85.	0.432	1.174	24.09	-37.251	-1211.	18.05	15.281	123.135	135.416	5170.	42645.	47815.	
90.	0.524	1.171	24.21	-36.425	-956.	19.00	16.280	120.054	137.234	5529.	42440.	47968.	
95.	0.633	1.168	24.32	-35.565	-632.	19.06	17.270	118.824	136.094	5889.	42231.	48120.	
100.	0.761	1.164	24.43	-34.696	-329.	19.11	18.251	116.743	134.994	6251.	42019.	48271.	
105.	0.908	1.161	24.54	-33.815	-10.	19.17	19.224	114.706	133.950	6615.	41804.	48419.	
110.	1.079	1.157	24.66	-32.919	306.	19.23	20.185	112.718	132.903	6979.	41587.	48566.	
115.	1.275	1.153	24.77	-32.040	2946.	19.29	21.171	110.738	131.809	7346.	41375.	48710.	
120.	1.500	1.150	24.88	-25.689	3024.	19.36	22.641	108.306	130.747	7724.	40929.	48853.	
125.	1.756	1.146	24.98	-25.478	3086.	19.42	23.496	106.519	130.015	8260.	40733.	48993.	
130.	2.047	1.142	25.09	-25.310	3132.	19.49	24.337	104.775	129.112	8595.	40536.	49131.	
135.	2.376	1.138	25.19	-25.186	3161.	19.56	25.162	103.073	128.235	8928.	40338.	49267.	
140.	2.746	1.134	25.29	-25.106	3170.	19.63	25.973	101.412	127.384	9259.	40140.	49399.	
145.	3.162	1.130	25.38	-25.072	3161.	19.70	26.770	99.788	126.558	9589.	39941.	49530.	
150.	3.627	1.126	25.47	-25.082	3132.	19.77	27.553	98.202	125.754	9916.	39740.	49657.	
155.	4.145	1.122	25.55	-25.135	3084.	19.84	28.323	96.650	124.973	10242.	39539.	49781.	
160.	4.721	1.117	25.63	-25.231	3017.	19.91	29.070	95.132	124.211	10567.	39336.	49902.	
165.	5.359	1.113	25.70	-25.367	2931.	19.99	29.824	93.645	123.469	10889.	39131.	50020.	
170.	6.064	1.109	25.76	-25.530	2828.	20.07	30.557	92.189	122.746	11211.	38924.	50135.	
175.	6.840	1.105	25.82	-25.743	2708.	20.14	31.279	90.761	122.040	11531.	38715.	50246.	
180.	7.693	1.100	25.86	-25.976	2573.	20.22	31.991	89.360	121.350	11850.	38504.	50353.	
185.	8.628	1.096	25.90	-26.231	2426.	20.30	32.693	87.985	120.676	12168.	38289.	50457.	
190.	9.649	1.092	25.92	-26.503	2269.	20.38	33.386	86.630	120.016	12486.	38071.	50557.	
195.	10.764	1.087	25.93	-26.782	2106.	20.46	34.073	85.297	119.370	12804.	37849.	50653.	

200.	11.976	1.083	25.93	-27.062	194.1	20.54	34.753	83.984	118.737	13123.	37622.	50744.
205.	13.292	1.079	25.91	-27.331	1778.	20.63	35.427	82.628	118.116	13442.	37389.	50832.
210.	14.718	1.074	25.88	-27.577	1623.	20.71	36.098	81.407	117.506	13764.	37151.	50915.
215.	16.260	1.070	25.84	-27.789	1483.	20.80	36.767	80.139	116.907	14087.	36906.	50993.
220.	17.923	1.066	25.77	-27.950	1365.	20.88	37.436	78.822	116.317	14414.	36653.	51067.
225.	19.716	1.061	25.68	-28.043	1279.	20.97	38.106	77.631	115.737	14745.	36390.	51136.
230.	21.643	1.057	25.57	-28.049	1234.	21.05	38.779	76.386	115.165	15082.	36118.	51200.
235.	23.712	1.053	25.44	-27.944	1244.	21.14	39.459	75.142	114.601	15425.	35833.	51258.
240.	25.929	1.048	25.29	-27.702	1223.	21.23	40.149	73.896	114.045	15776.	35535.	51312.
245.	28.301	1.044	25.10	-27.233	1187.	21.32	40.850	72.645	113.495	16138.	35222.	51383.
250.	30.835	1.040	24.89	-26.682	1156.	21.40	41.568	71.383	112.950	16511.	34891.	51431.
255.	33.540	1.035	24.64	-25.829	2154.	21.49	42.306	70.106	112.411	16898.	34530.	51468.
260.	36.420	1.031	24.36	-24.687	2707.	21.58	43.069	68.808	111.877	17303.	34104.	51498.
265.	39.486	1.027	24.04	-23.200	3448.	21.67	43.863	67.483	111.347	17729.	33762.	51521.
270.	42.743	1.023	23.68	-21.305	4415.	21.75	44.696	66.124	110.820	18179.	33329.	51509.
275.	46.200	1.019	23.27	-18.926	5653.	21.84	45.574	64.722	110.296	18659.	32860.	51519.
280.	49.865	1.015	22.82	-15.972	7216.	21.92	46.502	63.266	109.774	19174.	32349.	51523.
285.	53.746	1.011	22.32	-12.336	9169.	22.01	47.508	61.746	109.254	19730.	31789.	51513.
290.	57.851	1.007	21.77	-7.888	11592.	22.09	48.589	60.146	108.735	20337.	31171.	51508.
295.	62.189	1.004	21.16	-2.473	14561.	22.17	49.766	58.451	108.217	21003.	30485.	51483.
300.	66.769	1.000	20.50	4.099	18253.	22.25	51.060	56.639	107.698	21742.	29719.	51462.
305.	(71.600)	0.997	19.79	(12.063)	(22754.)	22.33	(52.494)	(54.685)	(107.179)	(22569.)	(28857.)	(51426.)
310.	(76.692)	0.993	19.03	(21.701)	(28967.)	22.40	(54.099)	(52.560)	(106.650)	(23502.)	(27881.)	(51383.)
315.	(82.053)	0.990	18.23	(33.401)	(35020.)	22.48	(55.914)	(50.221)	(106.137)	(24562.)	(26764.)	(51350.)
320.	(87.695)	0.987	17.42	(47.600)	(43906.)	22.55	(57.985)	(47.628)	(105.613)	(25781.)	(25478.)	(51263.)
325.	(93.628)	0.984	16.65	(64.902)	(53503.)	22.62	(60.375)	(44.711)	(105.060)	(27215.)	(23983.)	(51138.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 20. NaCl concentration: 7.0000 mol/kg H₂O

t (°C)	p (bars)	d ^L (g cm ⁻³)	\bar{v}_g^L (cm ³ mol ⁻¹)	\bar{S}_g^L (J mol ⁻¹ K ⁻¹)	\bar{H}_g^L (J mol ⁻¹)	V ^L (cm ³ mol ⁻¹)	29.03 wt percent			11.198 mol percent		
							S ^L	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L	ΔH (J mol ⁻¹)	H ^G
135.	2.311	1.150	25.64	-24.584	4137.	19.60	24.705	103.780	128.486	8861.	40417.	49278.
140.	2.673	1.146	25.76	-24.475	4159.	19.67	25.512	102.121	127.633	9190.	40121.	49412.
145.	3.079	1.142	25.88	-24.412	4161.	19.74	26.305	100.500	126.804	9518.	40023.	49543.
150.	3.533	1.138	26.00	-24.395	4144.	19.82	27.083	98.916	125.999	9843.	39828.	49671.
155.	4.040	1.133	26.11	-24.422	4107.	19.89	27.847	97.369	125.216	10166.	39630.	49797.
160.	4.603	1.129	26.21	-24.492	4050.	19.96	28.598	95.855	124.453	10488.	39431.	49919.
165.	5.227	1.125	26.32	-24.602	3975.	20.04	29.337	94.373	123.710	10808.	39231.	50039.
170.	5.917	1.121	26.42	-24.749	3882.	20.11	30.064	92.922	122.986	11126.	39029.	50155.
175.	6.673	1.116	26.51	-24.930	3772.	20.19	30.780	91.500	122.279	11443.	38825.	50267.
180.	7.513	1.112	26.59	-25.140	3648.	20.27	31.484	90.105	121.588	11758.	38618.	50376.
185.	8.428	1.108	26.66	-25.372	3511.	20.35	32.179	88.735	120.913	12073.	38408.	50482.
190.	9.430	1.103	26.72	-25.621	3365.	20.43	32.865	87.388	120.253	12388.	38196.	50583.
195.	10.522	1.099	26.78	-25.878	3212.	20.51	33.544	86.063	119.607	12702.	37979.	50681.
200.	11.711	1.095	26.82	-26.136	3057.	20.59	34.216	84.757	118.974	13017.	37758.	50775.
205.	13.002	1.090	26.85	-26.382	2904.	20.67	34.884	83.469	118.353	13332.	37532.	50864.
210.	14.402	1.086	26.87	-26.607	2760.	20.76	35.547	82.196	117.743	13650.	37298.	50949.
215.	15.915	1.082	26.87	-26.796	2630.	20.84	36.209	80.935	117.145	13970.	37060.	51030.
220.	17.549	1.077	26.86	-26.934	2523.	20.93	36.871	79.685	116.556	14293.	36813.	51106.
225.	19.310	1.073	26.85	-27.003	2449.	21.01	37.535	78.442	115.977	14621.	36566.	51177.
230.	21.203	1.069	26.78	-26.983	2416.	21.09	38.204	77.203	115.406	14954.	36289.	51243.
235.	23.237	1.064	26.72	-26.852	2439.	21.18	38.879	75.964	114.843	15294.	36010.	51305.
240.	25.416	1.060	26.63	-26.582	2532.	21.27	39.565	74.723	114.288	15644.	35717.	51361.
245.	27.749	1.056	26.52	-26.143	2711.	21.35	40.264	73.476	113.740	16003.	35408.	51412.
250.	30.242	1.052	26.38	-25.499	2998.	21.44	40.982	72.216	113.198	16376.	35081.	51457.
255.	32.902	1.047	26.22	-24.610	3414.	21.52	41.721	70.940	112.661	16764.	34732.	51496.
260.	35.737	1.043	26.03	-23.428	3988.	21.61	42.488	69.640	112.129	17170.	34359.	51530.
265.	38.754	1.039	25.80	-21.897	4753.	21.69	43.290	68.311	111.601	17599.	33958.	51557.
270.	41.961	1.035	25.55	-19.953	5746.	21.78	44.133	66.945	111.077	18054.	33524.	51578.
275.	45.365	1.031	25.26	-17.517	7014.	21.86	45.025	65.531	110.557	18541.	33051.	51592.
280.	48.974	1.027	24.93	-14.499	8613.	21.94	45.978	64.060	110.038	19065.	32534.	51600.
285.	52.797	1.024	24.56	-10.788	10607.	22.02	47.003	62.519	109.522	19635.	31965.	51600.
290.	56.841	1.020	24.16	-6.257	13078.	22.10	48.115	60.892	109.007	20258.	31235.	51594.
295.	61.116	1.017	23.72	-0.744	16122.	22.18	49.332	59.161	108.493	20947.	30635.	51580.
300.	65.630	1.013	23.24	5.943	19860.	22.25	50.675	57.304	107.979	21713.	29844.	51558.
305.	(70.392)	1.010	22.73	(14.043)	(24440.)	22.32	(52.171)	(55.295)	(107.465)	(22574.)	(28954.)	(51528.)
310.	(75.412)	1.007	22.20	(23.850)	(30046.)	22.39	(53.852)	(53.093)	(106.951)	(23550.)	(27939.)	(51490.)
315.	(80.698)	1.004	21.66	(35.734)	(36912.)	22.46	(55.759)	(50.675)	(106.435)	(24668.)	(26775.)	(51443.)
320.	(86.262)	1.001	21.16	(50.160)	(45337.)	22.52	(57.946)	(47.971)	(105.917)	(25959.)	(25429.)	(51387.)
325.	(92.113)	0.998	20.74	(67.753)	(55706.)	22.58	(60.478)	(44.919)	(105.397)	(27467.)	(23856.)	(51323.)

Table 21. NaCl concentration: 7.3332 mol/kg H₂O 30.00 wt percent 11.670 mol percent

t (°C)	P (bars)	d ^L (g cm ⁻³)	\bar{v}_a^L (cm ³ mol ⁻¹)	\bar{S}_a^L (J mol ⁻¹ K ⁻¹)	H _a ^L (J mol ⁻¹)	V ^L (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L	ΔH (J mol ⁻¹)	H ^G
160.	4.523	1.137	26.60	-23.921	4750.	20.00	28.273	96.346	124.620	10434.	39497.	49931.
165.	5.138	1.133	26.72	-24.020	4680.	20.07	29.008	94.868	123.875	10752.	39299.	50051.
170.	5.818	1.128	26.84	-24.156	4592.	20.15	29.730	93.420	123.150	11068.	39100.	50168.
175.	6.568	1.124	26.95	-24.324	4487.	20.23	30.440	92.001	122.442	11383.	38899.	50282.
180.	7.392	1.120	27.06	-24.526	4367.	20.30	31.140	90.610	121.750	11696.	38696.	50392.
185.	8.295	1.115	27.15	-24.748	4236.	20.38	31.831	89.244	121.075	12008.	38490.	50498.
190.	9.283	1.111	27.24	-24.988	4092.	20.46	32.512	87.902	120.414	12320.	38281.	50601.
195.	10.361	1.107	27.33	-25.257	3943.	20.54	33.186	86.582	119.767	12632.	38068.	50700.
200.	11.535	1.102	27.40	-25.565	3791.	20.63	33.853	85.281	119.134	12944.	37851.	50795.
205.	12.810	1.098	27.46	-25.924	3642.	20.71	34.515	83.997	118.512	13257.	37628.	50885.
210.	14.192	1.093	27.51	-26.340	3502.	20.79	35.174	82.729	117.903	13572.	37400.	50972.
215.	15.687	1.089	27.54	-26.811	3376.	20.87	35.831	81.475	117.304	13889.	37165.	51054.
220.	17.302	1.085	27.57	-26.251	3273.	20.96	36.488	80.227	116.715	14210.	36922.	51131.
225.	19.042	1.080	27.57	-26.311	3202.	21.04	37.148	78.989	116.136	14535.	36669.	51204.
230.	20.914	1.076	27.57	-26.283	3175.	21.13	37.812	77.754	115.566	14866.	36406.	51272.
235.	22.925	1.072	27.54	-26.142	3202.	21.21	38.484	76.520	115.004	15205.	36131.	51335.
240.	25.080	1.067	27.50	-25.861	3300.	21.30	39.168	75.282	114.449	15552.	35841.	51393.
245.	27.388	1.063	27.43	-25.410	3485.	21.38	39.865	74.036	113.902	15911.	35535.	51446.
250.	29.855	1.059	27.35	-24.754	3778.	21.47	40.582	72.778	113.360	16282.	35210.	51493.
255.	32.487	1.055	27.24	-23.850	4202.	21.55	41.322	71.502	112.824	16670.	34864.	51534.
260.	35.293	1.051	27.11	-22.850	4785.	21.63	42.092	70.201	112.293	17078.	34492.	51570.
265.	38.280	1.047	26.96	-21.101	5560.	21.72	42.898	68.869	111.767	17508.	34091.	51599.
270.	41.455	1.043	26.78	-19.133	6566.	21.80	43.747	67.498	111.244	17967.	33656.	51622.
275.	44.826	1.039	26.58	-16.571	7849.	21.88	44.648	66.077	110.725	18458.	33181.	51639.
280.	48.501	1.032	26.29	-13.521	9465.	21.96	45.514	64.595	110.209	18989.	32660.	51669.
285.	52.188	1.028	26.01	-9.874	11480.	22.04	46.355	63.059	109.694	19567.	32086.	51692.
290.	56.195	1.025	25.70	-5.298	13975.	22.11	47.168	61.594	109.182	20201.	31477.	51718.
295.	60.431	1.028	25.37	0.268	17050.	22.19	48.030	59.636	108.670	20904.	30733.	51737.
300.	64.995	1.021	25.00	7.019	20824.	22.26	50.406	57.753	108.158	21688.	29930.	51618.
305.	69.625	1.018	24.63	15.194	25447.	22.33	51.942	55.705	107.647	22572.	29019.	51591.
310.	74.601	1.015	24.25	25.093	31107.	22.39	53.673	53.462	107.135	23576.	27980.	51556.
315.	79.842	1.012	23.88	37.089	38040.	22.46	55.642	50.980	106.622	24729.	26784.	51513.
320.	85.359	1.009	23.58	51.059	46546.	22.52	57.904	48.203	106.108	26065.	25397.	51461.
325.	91.161	1.007	23.38	69.417	57017.	22.58	60.531	45.060	105.591	27628.	23772.	51400.

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 22. NaCl concentration: 7.5000 mol/kg H₂O 30.47 wt percent 11.903 mol percent

t (°C)	P (bars)	d ^L (g cm ⁻³)	$\frac{\bar{V}^L}{2}$ (cm ³ mol ⁻¹)	$\frac{\bar{S}^L}{2}$ (J mol ⁻¹ K ⁻¹)	$\frac{\bar{H}^L}{2}$ (J mol ⁻¹)	v ^L (cm ³ mol ⁻¹)	s ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L	ΔH (J mol ⁻¹)	H ^G
170.	5.768	(1.132)	(27.05)	(-23.839)	(4949.)	(20.17)	(29.561)	(93.672)	123.234	(11038.)	(39136.)	50175.
175.	6.512	(1.128)	(27.17)	(-24.006)	(4846.)	(20.24)	(30.209)	(92.256)	122.525	(11352.)	(38937.)	50283.
180.	7.330	(1.123)	(27.29)	(-24.202)	(4727.)	(20.32)	(30.967)	(90.866)	121.833	(11664.)	(38735.)	50393.
185.	8.227	(1.119)	(27.40)	(-24.421)	(4596.)	(20.40)	(31.655)	(89.502)	121.157	(11975.)	(38531.)	50506.
190.	9.209	(1.115)	(27.50)	(-24.658)	(4455.)	(20.48)	(32.333)	(88.163)	120.496	(12286.)	(38324.)	50610.
195.	10.280	(1.110)	(27.59)	(-24.904)	(4307.)	(20.56)	(33.004)	(86.844)	119.849	(12596.)	(38113.)	50703.
200.	11.446	(1.106)	(27.68)	(-25.151)	(4157.)	(20.64)	(33.669)	(85.566)	119.215	(12907.)	(37898.)	50805.
205.	12.713	(1.101)	(27.76)	(-25.387)	(4009.)	(20.73)	(34.328)	(84.285)	118.593	(13218.)	(37678.)	50898.
210.	14.087	(1.097)	(27.82)	(-25.601)	(3860.)	(20.81)	(34.984)	(83.000)	117.983	(13532.)	(37451.)	50983.
215.	15.573	(1.093)	(27.87)	(-25.780)	(3714.)	(20.89)	(35.639)	(81.746)	117.384	(13848.)	(37218.)	51066.
220.	17.178	(1.088)	(27.91)	(-25.908)	(3572.)	(20.96)	(36.294)	(80.502)	116.796	(14167.)	(36977.)	51148.
225.	18.908	(1.084)	(27.94)	(-25.966)	(3432.)	(21.06)	(36.951)	(79.266)	116.217	(14491.)	(36727.)	51218.
230.	20.770	(1.080)	(27.95)	(-25.955)	(3294.)	(21.14)	(37.613)	(78.033)	115.646	(14821.)	(36466.)	51286.
235.	22.769	(1.075)	(27.95)	(-25.792)	(3157.)	(21.23)	(38.284)	(76.800)	115.084	(15158.)	(36192.)	51350.
240.	24.913	(1.071)	(27.93)	(-25.508)	(3024.)	(21.31)	(38.966)	(75.564)	114.530	(15505.)	(35904.)	51409.
245.	27.209	(1.067)	(27.88)	(-25.054)	(2891.)	(21.40)	(39.662)	(74.320)	113.982	(15863.)	(35600.)	51462.
250.	29.662	(1.063)	(27.82)	(-24.394)	(2758.)	(21.48)	(40.379)	(73.062)	113.441	(16234.)	(35276.)	51510.
255.	32.282	(1.058)	(27.74)	(-23.485)	(2624.)	(21.57)	(41.119)	(71.786)	112.905	(16622.)	(34931.)	51553.
260.	35.074	(1.054)	(27.64)	(-22.281)	(2489.)	(21.65)	(41.890)	(70.485)	112.375	(17030.)	(34559.)	51589.
265.	38.046	(1.050)	(27.51)	(-20.723)	(2354.)	(21.73)	(42.697)	(69.152)	111.849	(17461.)	(34158.)	51620.
270.	41.205	(1.046)	(27.35)	(-18.757)	(2219.)	(21.81)	(43.549)	(67.778)	111.327	(17921.)	(33723.)	51648.
275.	44.560	(1.043)	(27.17)	(-16.275)	(2084.)	(21.89)	(44.456)	(66.353)	110.808	(18414.)	(33267.)	51662.
280.	48.119	(1.039)	(26.96)	(-13.213)	(1948.)	(21.97)	(45.427)	(64.866)	110.293	(18948.)	(32785.)	51675.
285.	51.889	(1.035)	(26.72)	(-9.451)	(1809.)	(22.05)	(46.476)	(63.303)	109.779	(19530.)	(32187.)	51679.
290.	55.878	(1.032)	(26.46)	(-8.856)	(1669.)	(22.12)	(47.619)	(61.648)	109.267	(20170.)	(31504.)	51679.
295.	60.006	(1.028)	(26.18)	(-0.735)	(1528.)	(22.20)	(48.874)	(59.882)	108.756	(20880.)	(30785.)	51663.
300.	64.550	(1.025)	(25.88)	(7.511)	(1385.)	(22.27)	(50.266)	(57.980)	108.246	(21673.)	(29974.)	51647.
305.	(69.250)	(1.022)	(25.56)	(15.721)	(1241.)	(22.33)	(51.822)	(55.914)	(107.736)	(22568.)	(29054.)	(51622.)
310.	(74.206)	(1.019)	(25.25)	(25.661)	(1100.)	(22.40)	(53.578)	(53.647)	(107.225)	(23587.)	(28002.)	(51588.)
315.	(79.426)	(1.016)	(24.98)	(37.708)	(965.)	(22.46)	(55.578)	(51.136)	(106.713)	(24757.)	(26790.)	(51547.)
320.	(84.920)	(1.013)	(24.76)	(52.342)	(830.)	(22.52)	(57.878)	(48.322)	(106.200)	(26115.)	(25382.)	(51496.)
325.	(90.699)	(1.011)	(24.68)	(70.180)	(695.)	(22.59)	(60.551)	(45.134)	(105.685)	(27706.)	(23732.)	(51438.)

Norg.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 23. NaCl concentration:													31.86 wt percent				12.597 mol percent			
t (°C)	p (bars)	d ^L (g cm ⁻³)	\bar{v}_L^L (cm ³ mol ⁻¹)	\bar{S}_L^L (J mol ⁻¹ K ⁻¹)	\bar{H}_L^L (J mol ⁻¹)	V ^L (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)			S ^G	H ^L	ΔH	H ^G							
							ΔS	ΔS	ΔS											
200.	11.178	(1.116)	(28.51)	(-24.112)	(5243.)	(20.70)	(33.108)	(85.355)	119.463	(12790.)	(38045.)	50835.								
205.	12.421	(1.112)	(28.63)	(-24.350)	(5094.)	(20.79)	(33.759)	(85.081)	118.840	(13097.)	(37831.)	50928.								
210.	13.769	(1.107)	(28.74)	(-24.566)	(4953.)	(20.87)	(34.406)	(83.823)	118.229	(13406.)	(37611.)	51017.								
215.	15.229	(1.103)	(28.84)	(-24.746)	(4827.)	(20.95)	(35.052)	(82.577)	117.629	(13718.)	(37384.)	51102.								
220.	16.806	(1.099)	(28.93)	(-24.876)	(4724.)	(21.04)	(35.699)	(81.340)	117.040	(14033.)	(37149.)	51182.								
225.	18.506	(1.094)	(29.01)	(-24.937)	(4653.)	(21.12)	(36.349)	(80.111)	116.460	(14353.)	(36905.)	51258.								
230.	20.337	(1.090)	(29.08)	(-24.909)	(4624.)	(21.20)	(37.005)	(78.884)	115.889	(14679.)	(36650.)	51329.								
235.	22.304	(1.086)	(29.14)	(-24.767)	(4652.)	(21.29)	(37.669)	(77.658)	115.327	(15013.)	(36382.)	51395.								
240.	24.413	(1.081)	(29.18)	(-24.485)	(4751.)	(21.37)	(38.340)	(76.426)	114.772	(15356.)	(36100.)	51456.								
245.	26.673	(1.077)	(29.21)	(-24.031)	(4937.)	(21.45)	(39.039)	(75.185)	114.225	(15712.)	(35800.)	51512.								
250.	29.090	(1.073)	(29.22)	(-23.569)	(5233.)	(21.54)	(39.753)	(73.930)	113.684	(16082.)	(35481.)	51573.								
255.	31.670	(1.069)	(29.21)	(-22.457)	(5661.)	(21.62)	(40.494)	(72.555)	113.148	(16469.)	(35139.)	51608.								
260.	34.421	(1.065)	(29.19)	(-21.246)	(6250.)	(21.70)	(41.267)	(71.152)	112.619	(16877.)	(34770.)	51647.								
265.	37.351	(1.061)	(29.15)	(-19.680)	(7033.)	(21.78)	(42.079)	(70.014)	112.093	(17311.)	(34370.)	51680.								
270.	40.467	(1.057)	(29.10)	(-17.690)	(8051.)	(21.86)	(42.940)	(68.933)	111.572	(17774.)	(33933.)	51708.								
275.	43.777	(1.053)	(29.02)	(-15.199)	(9340.)	(21.94)	(43.858)	(67.937)	111.055	(18274.)	(33455.)	51723.								
280.	47.289	(1.049)	(28.93)	(-12.112)	(10885.)	(22.02)	(44.846)	(65.994)	110.541	(18816.)	(32927.)	51743.								
285.	51.010	(1.046)	(28.82)	(-8.518)	(13027.)	(22.09)	(45.918)	(64.100)	110.028	(19410.)	(32340.)	51751.								
290.	54.949	(1.042)	(28.69)	(-3.681)	(15557.)	(22.17)	(47.090)	(62.428)	109.518	(20066.)	(31685.)	51752.								
295.	59.114	(1.039)	(28.56)	(1.961)	(18674.)	(22.24)	(48.384)	(60.626)	109.009	(20796.)	(30949.)	51745.								
300.	63.515	(1.036)	(28.43)	(8.806)	(22503.)	(22.31)	(49.822)	(58.679)	108.501	(21616.)	(30116.)	51732.								
305.	(68.160)	(1.033)	(28.31)	(17.101)	(27196.)	(22.37)	(51.438)	(56.556)	(107.994)	(22544.)	(29166.)	(51710.)								
310.	(73.058)	(1.030)	(28.21)	(27.148)	(32943.)	(22.43)	(53.267)	(54.219)	(107.486)	(23604.)	(28077.)	(51681.)								
315.	(78.210)	(1.027)	(28.18)	(39.331)	(39985.)	(22.49)	(55.358)	(51.619)	(106.977)	(24827.)	(26817.)	(51644.)								
320.	(83.653)	(1.025)	(28.25)	(54.137)	(48632.)	(22.56)	(57.771)	(48.696)	(106.467)	(26250.)	(25348.)	(51598.)								
325.	(89.369)	(1.022)	(28.50)	(72.194)	(59283.)	(22.62)	(60.584)	(45.371)	(105.955)	(27923.)	(23620.)	(51543.)								

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 24. NaCl concentration: 8.5000 mol/kg H₂O 33.19 wt percent 13.279 mol percent

t (°C)	P (bars)	d ^L (g cm ⁻³)	$\frac{V^L}{a}$ (cm ³ mol ⁻¹)	$\frac{S^L}{a}$ (J mol ⁻¹ K ⁻¹)	$\frac{H^L}{a}$ (J mol ⁻¹)	$\frac{V^L}{a}$ (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L	ΔH (J mol ⁻¹)	H ^G
225.	18.098	(1.104)	(30.05)	(-23.921)	(5691.)	(21.18)	(35.726)	(80.984)	116.710	(14202.)	(37096.)	51298.
230.	19.898	(1.099)	(30.18)	(-23.908)	(5655.)	(21.27)	(36.374)	(79.765)	116.138	(14524.)	(36847.)	51371.
235.	21.833	(1.095)	(30.29)	(-23.782)	(5674.)	(21.35)	(37.031)	(78.544)	115.575	(14854.)	(36586.)	51440.
240.	23.909	(1.091)	(30.39)	(-23.515)	(5765.)	(21.44)	(37.701)	(77.318)	115.019	(15194.)	(36309.)	51503.
245.	26.134	(1.087)	(30.49)	(-23.076)	(5944.)	(21.52)	(38.390)	(76.081)	114.471	(15546.)	(36015.)	51561.
250.	28.514	(1.082)	(30.57)	(-22.427)	(6232.)	(21.60)	(39.100)	(74.829)	113.929	(15914.)	(35701.)	51614.
255.	31.057	(1.078)	(30.64)	(-21.527)	(6653.)	(21.69)	(39.839)	(73.555)	113.394	(16300.)	(35362.)	51662.
260.	33.770	(1.074)	(30.70)	(-20.327)	(7237.)	(21.77)	(40.613)	(72.251)	112.864	(16708.)	(34996.)	51704.
265.	36.660	(1.070)	(30.75)	(-18.768)	(8016.)	(21.85)	(41.429)	(70.910)	112.339	(17143.)	(34597.)	51740.
270.	39.734	(1.066)	(30.79)	(-16.782)	(9031.)	(21.93)	(42.296)	(69.522)	111.818	(17610.)	(34161.)	51770.
275.	43.091	(1.063)	(30.81)	(-14.291)	(10330.)	(22.00)	(43.225)	(68.075)	111.300	(18114.)	(33680.)	51794.
280.	46.468	(1.059)	(30.83)	(-11.198)	(11970.)	(22.08)	(44.229)	(66.558)	110.780	(18665.)	(33187.)	51811.
285.	50.144	(1.055)	(30.84)	(-7.391)	(14018.)	(22.16)	(45.322)	(64.953)	110.275	(19270.)	(32553.)	51822.
290.	54.037	(1.052)	(30.85)	(-2.733)	(16560.)	(22.23)	(46.522)	(63.244)	109.766	(19940.)	(31886.)	51826.
295.	58.154	(1.049)	(30.87)	(2.941)	(19696.)	(22.30)	(47.851)	(61.407)	109.258	(20690.)	(31133.)	51823.
300.	62.506	(1.046)	(30.90)	(9.832)	(23551.)	(22.36)	(49.335)	(59.416)	108.751	(21534.)	(30278.)	51813.
305.	67.100	(1.043)	(30.96)	(18.188)	(28279.)	(22.43)	(51.007)	(57.237)	108.244	(22495.)	(29300.)	51795.
310.	71.917	(1.040)	(31.08)	(28.348)	(34075.)	(22.49)	(52.908)	(54.830)	107.738	(23596.)	(28174.)	51769.
315.	77.055	(1.037)	(31.28)	(40.610)	(41182.)	(22.55)	(55.068)	(52.145)	107.231	(24870.)	(26866.)	51736.
320.	82.435	(1.034)	(31.63)	(55.559)	(49914.)	(22.61)	(57.612)	(49.111)	106.722	(26357.)	(25336.)	51694.
325.	88.096	(1.031)	(32.20)	(73.805)	(60679.)	(22.68)	(60.563)	(45.650)	106.213	(28112.)	(23531.)	51643.

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 25. NaCl concentration:														
9.0000 mol/kg H ₂ O														
34.47 wt percent														
13.952 mol percent														
t	p	d ^L	\bar{v}_2^L	\bar{S}_2^L	\bar{H}_2^L	v^L	S^L	ΔS	S^G	H^L	ΔH	H^G		
(°C)	(bars)	(g cm ⁻³)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)
250.	27.925	(1.091)	(31.88)	(-21.570)	(7154.)	(21.68)	(38.415)	(75.769)	114.184	(15727.)	(35941.)	(15727.)	(35941.)	51667.
255.	30.431	(1.087)	(32.03)	(-20.698)	(7561.)	(21.76)	(39.150)	(74.497)	113.647	(16110.)	(35607.)	(16110.)	(35607.)	51717.
260.	33.105	(1.083)	(32.17)	(-19.524)	(8131.)	(21.84)	(39.923)	(73.193)	113.116	(16517.)	(35284.)	(16517.)	(35284.)	51761.
265.	35.955	(1.079)	(32.30)	(-17.989)	(8897.)	(21.92)	(40.740)	(71.850)	112.590	(16952.)	(34848.)	(16952.)	(34848.)	51800.
270.	38.989	(1.075)	(32.43)	(-16.024)	(9901.)	(22.00)	(41.612)	(70.656)	112.068	(17421.)	(34422.)	(17421.)	(34422.)	51833.
275.	42.215	(1.071)	(32.55)	(-13.550)	(11190.)	(22.08)	(42.550)	(69.000)	111.551	(17930.)	(33953.)	(17930.)	(33953.)	51859.
280.	45.659	(1.068)	(32.68)	(-10.470)	(12823.)	(22.16)	(43.567)	(67.069)	111.056	(18467.)	(33532.)	(18467.)	(33532.)	51880.
285.	49.271	(1.064)	(32.81)	(-6.569)	(14865.)	(22.23)	(44.679)	(65.845)	110.524	(19021.)	(32791.)	(19021.)	(32791.)	51895.
290.	53.119	(1.061)	(32.95)	(-2.009)	(17411.)	(22.30)	(45.905)	(64.110)	110.015	(19786.)	(32114.)	(19786.)	(32114.)	51900.
295.	57.191	(1.057)	(33.11)	(3.676)	(20553.)	(22.37)	(47.267)	(62.240)	109.507	(20554.)	(31346.)	(20554.)	(31346.)	51900.
300.	61.497	(1.054)	(33.30)	(10.590)	(24422.)	(22.44)	(48.795)	(60.206)	109.000	(21423.)	(30470.)	(21423.)	(30470.)	51893.
305.	(66.044)	(1.051)	(33.54)	(18.985)	(29175.)	(22.50)	(50.522)	(57.372)	(108.494)	(22414.)	(29465.)	(22414.)	(29465.)	(51878.)
310.	(70.842)	(1.048)	(33.86)	(29.174)	(35003.)	(22.57)	(52.492)	(55.497)	(107.988)	(23554.)	(28302.)	(23554.)	(28302.)	(51856.)
315.	(75.902)	(1.045)	(34.30)	(41.550)	(42160.)	(22.63)	(54.758)	(52.724)	(107.482)	(24788.)	(26948.)	(24788.)	(26948.)	(51825.)
320.	(81.233)	(1.042)	(34.91)	(56.615)	(50962.)	(22.70)	(57.390)	(49.584)	(106.974)	(26428.)	(25358.)	(26428.)	(25358.)	(51787.)
325.	(86.844)	(1.039)	(35.79)	(75.021)	(61823.)	(22.77)	(60.477)	(45.988)	(106.465)	(28263.)	(23477.)	(28263.)	(23477.)	(51740.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 26. NaCl concentration:												
t (°C)	p (bars)	d ^L (g cm ⁻³)	9.2135 mol/kg H ₂ O				35.00 wt percent				14.235 mol percent	
			$\frac{V^L}{3}$ (cm ³ mol ⁻¹)	$\frac{S^L}{S^L}$ (J mol ⁻¹ K ⁻¹)	$\frac{H^L}{H^L}$ (J mol ⁻¹)	$\frac{V^L}{3}$ (cm ³ mol ⁻¹)	S^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S^G	H^L (J mol ⁻¹)	ΔH (J mol ⁻¹)	H^G
260.	32.813	(1.087)	(32.78)	(-19.217)	(8485.)	(21.88)	(39.616)	(73.612)	113.227	(16428.)	(35358.)	51786.
265.	35.646	(1.083)	(32.95)	(-17.697)	(9243.)	(21.90)	(40.433)	(72.267)	112.701	(16863.)	(34963.)	51826.
270.	38.663	(1.079)	(33.11)	(-15.746)	(10239.)	(22.04)	(41.307)	(70.872)	112.179	(17332.)	(34528.)	51860.
275.	41.870	(1.075)	(33.28)	(-13.285)	(11522.)	(22.12)	(42.248)	(69.413)	111.660	(17843.)	(34045.)	51888.
280.	45.277	(1.071)	(33.45)	(-10.215)	(13148.)	(22.19)	(43.270)	(67.876)	111.146	(18402.)	(33507.)	51909.
285.	48.891	(1.068)	(33.63)	(-6.422)	(15189.)	(22.27)	(44.389)	(66.245)	110.634	(19021.)	(32903.)	51924.
290.	52.720	(1.064)	(33.83)	(-1.768)	(17729.)	(22.34)	(45.624)	(64.499)	110.124	(19710.)	(32222.)	51932.
295.	56.772	(1.061)	(34.05)	(3.915)	(20871.)	(22.41)	(47.001)	(62.615)	109.616	(20485.)	(31448.)	51933.
300.	61.058	(1.058)	(34.31)	(10.833)	(24741.)	(22.48)	(48.546)	(60.563)	109.109	(21364.)	(30564.)	51927.
305.	65.586	(1.054)	(34.62)	(19.238)	(29499.)	(22.54)	(50.295)	(58.307)	(108.603)	(22367.)	(29546.)	51914.
310.	70.365	(1.051)	(35.03)	(29.445)	(35339.)	(22.61)	(52.246)	(55.801)	(108.097)	(23524.)	(28569.)	51893.
315.	75.404	(1.048)	(35.56)	(41.849)	(42313.)	(22.67)	(54.596)	(52.994)	(107.590)	(24868.)	(27695.)	51864.
320.	80.715	(1.045)	(36.28)	(56.957)	(51340.)	(22.74)	(57.274)	(49.809)	(107.083)	(26446.)	(25981.)	51826.
325.	86.506	(1.042)	(37.29)	(75.423)	(62237.)	(22.81)	(60.448)	(46.156)	(106.574)	(28314.)	(23467.)	51781.

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 27. NaCl concentration: 9.5000 mol/kg H₂O 35.70 wt percent 14.613 mol percent

t (°C)	p (bars)	d ^L (g cm ⁻³)	$\frac{V^L}{2}$ (cm ³ mol ⁻¹)	$\frac{S^L}{2}$ (J mol ⁻¹ K ⁻¹)	$\frac{H^L}{2}$ (J mol ⁻¹)	V ^L (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L (J mol ⁻¹)	ΔH (J mol ⁻¹)	H ^G
270.	38.213	(1.083)	(34.02)	(-15.416)	(10662.)	(22.09)	(40.883)	(71.469)	112.331	(17204.)	(34694.)	51897.
275.	41.596	(1.079)	(34.25)	(-12.977)	(11933.)	(22.17)	(41.827)	(69.986)	111.812	(17716.)	(34211.)	51927.
280.	44.778	(1.075)	(34.48)	(-9.927)	(13500.)	(22.26)	(42.853)	(68.442)	111.297	(18278.)	(33672.)	51950.
285.	48.566	(1.072)	(34.72)	(-6.150)	(15389.)	(22.32)	(43.983)	(66.802)	110.784	(18901.)	(33065.)	51966.
290.	52.170	(1.068)	(34.99)	(-1.509)	(18113.)	(22.39)	(45.231)	(65.043)	110.274	(19598.)	(32378.)	51976.
295.	56.197	(1.065)	(35.29)	(4.167)	(21251.)	(22.46)	(46.625)	(63.141)	109.765	(20382.)	(31596.)	51979.
300.	60.456	(1.062)	(35.64)	(11.084)	(25121.)	(22.53)	(48.193)	(61.066)	109.258	(21273.)	(30701.)	51974.
305.	(64.957)	(1.059)	(36.05)	(19.497)	(29883.)	(22.60)	(49.972)	(58.780)	(108.752)	(22293.)	(29669.)	(51962.)
310.	(69.710)	(1.056)	(36.57)	(29.721)	(35734.)	(22.67)	(52.008)	(56.237)	(108.245)	(23471.)	(28472.)	(51943.)
315.	(74.722)	(1.052)	(37.23)	(42.156)	(42926.)	(22.73)	(54.358)	(53.381)	(107.738)	(24843.)	(27073.)	(51916.)
320.	(80.006)	(1.049)	(38.10)	(57.313)	(51783.)	(22.80)	(57.095)	(50.135)	(107.231)	(26455.)	(25425.)	(51880.)
325.	(85.570)	(1.046)	(39.28)	(75.852)	(62724.)	(22.88)	(60.315)	(46.407)	(106.722)	(28368.)	(23469.)	(51836.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 28. NaCl concentration: 10.0000 mol/kg H₂O 36.89 wt percent 15.265 mol percent

t (°C)	p (bars)	d ^L (g cm ⁻³)	$\frac{V^L}{2}$ (cm ³ mol ⁻¹)	$\frac{S^L}{2}$ (J mol ⁻¹ K ⁻¹)	$\frac{H^L}{2}$ (J mol ⁻¹)	V ^L (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L (J mol ⁻¹)	ΔH (J mol ⁻¹)	H ^G
290.	51.156	(1.075)	(36.98)	(-1.230)	(18669.)	(22.50)	(44.494)	(66.058)	110.552	(19368.)	(32687.)	52055.
295.	55.136	(1.072)	(37.42)	(4.418)	(21791.)	(22.57)	(45.915)	(64.127)	110.042	(20167.)	(31894.)	52061.
300.	59.348	(1.068)	(37.91)	(11.317)	(25651.)	(22.64)	(47.520)	(62.013)	109.533	(21079.)	(30981.)	52060.
305.	(63.801)	(1.065)	(38.50)	(19.725)	(30411.)	(22.71)	(49.348)	(59.678)	(109.026)	(22126.)	(29925.)	(52051.)
310.	(68.505)	(1.062)	(39.21)	(29.903)	(36270.)	(22.78)	(51.447)	(57.072)	(108.519)	(23300.)	(28695.)	(52035.)
315.	(73.469)	(1.059)	(40.09)	(42.435)	(43485.)	(22.85)	(53.878)	(54.134)	(108.011)	(24758.)	(27253.)	(52010.)
320.	(78.704)	(1.055)	(41.21)	(57.658)	(52382.)	(22.93)	(56.717)	(50.786)	(107.503)	(26429.)	(25549.)	(51978.)
325.	(84.220)	(1.051)	(42.69)	(76.305)	(63388.)	(23.02)	(60.066)	(46.928)	(106.993)	(28418.)	(23320.)	(51937.)

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 29. Halite - saturated NaCl solutions, concentrations in wt percent

w	t	p	d ^L	\bar{V}_g^L	\bar{S}_g^L	\bar{H}_2^L	\bar{V}^L	\bar{S}^L	ΔS	S^G	H ^L	ΔH	H ^G
wt percent	(°C)	(bars)	(g cm ⁻³)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(cm ³ mol ⁻¹)	(J mol ⁻¹ K ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)	(J mol ⁻¹)
27.472	80.	0.353	1.177	23.98	-38.068	-1513.	18.89	14.292	125.359	139.631	4816.	42844.	47660.
27.596	85.	0.431	1.175	24.10	-37.252	-1178.	18.95	15.259	123.168	138.427	5167.	42649.	47815.
27.725	90.	0.522	1.173	24.24	-36.408	-826.	19.01	16.215	121.053	137.269	5518.	42451.	47969.
27.859	95.	0.629	1.171	24.38	-35.539	-459.	19.06	17.161	118.991	136.152	5871.	42251.	48121.
27.998	100.	0.754	1.168	24.52	-34.646	-77.	19.13	18.096	116.979	135.075	6225.	42047.	48272.
28.113	105.	0.897	1.166	24.67	-33.726	322.	19.19	19.022	115.015	134.036	6581.	41840.	48422.
28.233	110.	1.063	1.163	24.83	-32.779	738.	19.25	19.934	113.100	133.034	6937.	41632.	48569.
28.408	115.	1.253	1.161	24.98	-31.766	3502.	19.32	21.503	110.562	132.066	7569.	41166.	48715.
28.608	120.	1.470	1.158	25.15	-25.306	3690.	19.39	22.324	108.806	131.130	7879.	40980.	48859.
28.774	125.	1.716	1.156	25.31	-25.046	3869.	19.46	23.126	107.099	130.225	8208.	40793.	49001.
28.945	130.	1.994	1.155	25.49	-24.777	4039.	19.53	23.911	105.358	129.349	8534.	40607.	49141.
29.122	135.	2.308	1.151	25.67	-24.541	4198.	19.61	24.677	103.824	128.501	8857.	40422.	49278.
29.304	140.	2.659	1.148	25.85	-24.339	4345.	19.68	25.426	102.254	127.680	9177.	40237.	49414.
29.491	145.	3.053	1.145	26.04	-24.172	4480.	19.76	26.157	100.727	126.884	9495.	40052.	49547.
29.683	150.	3.491	1.143	26.23	-24.038	4603.	19.84	26.870	99.241	126.112	9809.	39868.	49678.
29.881	155.	3.978	1.140	26.43	-23.937	4714.	19.92	27.566	97.796	125.362	10121.	39685.	49806.
30.084	160.	4.516	1.137	26.63	-23.869	4812.	20.00	28.244	96.390	124.634	10429.	39502.	49932.
30.292	165.	5.111	(1.135)	(26.84)	(-23.830)	(4898.)	(20.08)	(28.906)	(95.021)	(123.927)	(10734.)	(39320.)	50055.
30.505	170.	5.765	(1.132)	(27.06)	(-23.818)	(4978.)	(20.17)	(29.550)	(93.689)	(123.239)	(11036.)	(39139.)	50175.
30.724	175.	6.483	(1.130)	(27.29)	(-23.831)	(5037.)	(20.25)	(30.178)	(92.392)	(122.570)	(11335.)	(38957.)	50293.
30.948	180.	7.268	(1.127)	(27.52)	(-23.865)	(5093.)	(20.34)	(30.790)	(91.128)	(121.918)	(11631.)	(38776.)	50407.
31.178	185.	8.125	(1.124)	(27.76)	(-23.911)	(5142.)	(20.43)	(31.387)	(89.896)	(121.283)	(11924.)	(38595.)	50519.
31.413	190.	9.058	(1.122)	(28.01)	(-23.967)	(5187.)	(20.52)	(31.968)	(88.695)	(120.664)	(12214.)	(38411.)	50628.
31.653	195.	10.072	(1.119)	(28.27)	(-24.027)	(5229.)	(20.61)	(32.536)	(87.523)	(120.060)	(12501.)	(38233.)	50733.

31.898	200.	11.170	(1.116)	(28.53)	(-24.082)	(5274.)	(20.70)	(33.091)	(86.379)	119.470	(12786.)	(38049.)	50836.
32.149	205.	12.357	(1.114)	(28.81)	(-24.122)	(5325.)	(20.80)	(33.634)	(85.260)	118.894	(13070.)	(37865.)	50935.
32.405	210.	13.639	(1.111)	(29.10)	(-24.158)	(5386.)	(20.89)	(34.167)	(84.164)	118.331	(13353.)	(37678.)	51031.
32.666	215.	15.019	(1.109)	(29.41)	(-24.118)	(5465.)	(20.93)	(34.691)	(83.034)	117.780	(13634.)	(37489.)	51124.
32.932	220.	16.502	(1.106)	(29.73)	(-24.087)	(5568.)	(21.09)	(35.207)	(82.034)	117.241	(13917.)	(37296.)	51213.
33.204	225.	18.093	(1.104)	(30.06)	(-23.909)	(5703.)	(21.19)	(35.719)	(80.968)	116.713	(14201.)	(37098.)	51299.
33.481	230.	19.797	(1.102)	(30.42)	(-23.686)	(5880.)	(21.28)	(36.228)	(79.950)	116.196	(14487.)	(36894.)	51381.
33.764	235.	21.619	(1.099)	(30.79)	(-23.357)	(6111.)	(21.38)	(36.735)	(78.950)	115.688	(14778.)	(36682.)	51460.
34.052	240.	23.564	(1.097)	(31.10)	(-22.896)	(6410.)	(21.49)	(37.254)	(77.937)	115.190	(15075.)	(36460.)	51535.
34.345	245.	25.636	(1.095)	(31.61)	(-22.274)	(6792.)	(21.59)	(37.778)	(76.923)	114.701	(15381.)	(36225.)	51607.
34.643	250.	27.841	(1.092)	(32.06)	(-21.458)	(7277.)	(21.69)	(38.316)	(75.904)	114.220	(15699.)	(35976.)	51674.
34.947	255.	30.183	(1.090)	(32.55)	(-20.407)	(7886.)	(21.79)	(38.876)	(74.872)	113.748	(16031.)	(35707.)	51739.
35.256	260.	32.668	(1.088)	(33.07)	(-19.075)	(8651.)	(21.89)	(39.463)	(73.810)	113.283	(16383.)	(35416.)	51799.
35.570	265.	35.301	(1.086)	(33.65)	(-17.406)	(9600.)	(22.00)	(40.089)	(72.736)	112.825	(16759.)	(35096.)	51855.
35.889	270.	38.086	(1.084)	(34.27)	(-15.334)	(10772.)	(22.10)	(40.763)	(71.611)	112.374	(17167.)	(34741.)	51908.
36.214	275.	41.029	(1.082)	(34.96)	(-12.782)	(12116.)	(22.21)	(41.500)	(70.431)	111.930	(17613.)	(34344.)	51956.
36.544	280.	44.133	(1.081)	(35.72)	(-9.654)	(13987.)	(22.31)	(42.315)	(69.178)	111.493	(18107.)	(33894.)	52001.
36.880	285.	47.404	(1.079)	(36.58)	(-5.836)	(16154.)	(22.42)	(43.230)	(67.832)	111.062	(18662.)	(33380.)	52042.
37.221	290.	50.845	(1.077)	(37.54)	(-1.191)	(18803.)	(22.53)	(44.268)	(66.369)	110.637	(19293.)	(32787.)	52079.
37.567	295.	54.461	(1.075)	(38.65)	(4.453)	(22037.)	(22.64)	(45.461)	(64.757)	110.218	(20017.)	(32096.)	52113.
37.918	300.	58.253	(1.073)	(39.92)	(11.304)	(25987.)	(22.75)	(46.847)	(62.959)	109.806	(20859.)	(31284.)	52143.
38.275	305.	(62.226)	(1.071)	(41.40)	(19.626)	(30815.)	(22.87)	(48.475)	(60.925)	109.401	(21848.)	(30322.)	(52169.)
38.637	310.	(66.379)	(1.069)	(43.16)	(29.747)	(36728.)	(23.00)	(50.407)	(58.595)	109.002	(23022.)	(29171.)	(52193.)
39.004	315.	(70.713)	(1.066)	(45.27)	(42.000)	(43991.)	(23.13)	(52.722)	(55.869)	108.611	(24430.)	(27783.)	(52213.)
39.376	320.	(75.227)	(1.063)	(47.80)	(57.200)	(52548.)	(23.29)	(55.524)	(52.705)	108.229	(26139.)	(26093.)	(52232.)
39.754	325.	(79.918)	(1.058)	(51.10)	(75.737)	(64956.)	(23.48)	(58.950)	(48.907)	107.857	(28232.)	(24016.)	(52249.)

Note.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.

Table 30. Halite - saturated NaCl solutions, concentrations in mol NaCl/kg H₂O (molar)

x (molar)	t (°C)	p (bars)	d ^L (g cm ⁻³)	\bar{V}_2^L (cm ³ mol ⁻¹)	\bar{S}_2^L (J mol ⁻¹ K ⁻¹)	\bar{H}_2^L (J mol ⁻¹)	\bar{V}^L (cm ³ mol ⁻¹)	S ^L (J mol ⁻¹ K ⁻¹)	ΔS (J mol ⁻¹ K ⁻¹)	S ^G	H ^L	ΔH (J mol ⁻¹)	H ^G
6.481	80.	0.353	1.177	23.98	-38.068	-1513.	16.89	14.292	125.339	139.631	4816.	42844.	47660.
6.522	85.	0.431	1.175	24.10	-37.252	-1178.	18.35	15.259	123.168	138.427	5167.	42649.	47815.
6.564	90.	0.522	1.173	24.24	-36.408	-826.	19.01	16.215	121.053	137.269	5518.	42451.	47969.
6.608	95.	0.629	1.171	24.38	-35.539	-459.	19.06	17.161	118.991	136.152	5871.	42251.	48121.
6.654	100.	0.754	1.168	24.52	-34.646	-77.	19.13	18.096	116.979	135.075	6225.	42047.	48272.
6.701	105.	0.897	1.166	24.67	-33.726	322.	19.19	19.022	115.015	134.036	6581.	41840.	48422.
6.751	110.	1.063	1.163	24.83	-32.779	738.	19.25	19.934	113.100	133.034	6937.	41632.	48569.
6.803	115.	1.253	1.161	24.98	-31.806	3502.	19.32	21.503	110.562	132.066	7549.	41166.	48715.
6.857	120.	1.470	1.158	25.15	-25.346	3690.	19.39	22.524	108.806	131.130	7879.	40980.	48859.
6.913	125.	1.716	1.156	25.31	-25.046	3869.	19.46	23.126	107.009	130.225	8208.	40793.	49001.
6.970	130.	1.994	1.153	25.49	-24.777	4039.	19.53	23.911	105.438	129.349	8534.	40607.	49141.
7.030	135.	2.308	1.151	25.67	-24.541	4198.	19.61	24.677	103.824	128.501	8857.	40422.	49278.
7.092	140.	2.659	1.148	25.85	-24.359	4345.	19.68	25.426	102.254	127.680	9177.	40237.	49414.
7.157	145.	3.053	1.145	26.04	-24.172	4480.	19.76	26.157	100.727	126.884	9495.	40052.	49547.
7.223	150.	3.491	1.143	26.23	-24.038	4603.	19.84	26.870	99.241	126.112	9809.	39868.	49678.
7.292	155.	3.978	1.140	26.43	-23.937	4714.	19.92	27.566	97.796	125.362	10121.	39685.	49806.
7.362	160.	4.516	1.137	26.63	-23.869	4812.	20.00	28.244	96.390	124.634	10429.	39502.	49932.
7.436	165.	5.111	(1.135)	(26.84)	(-23.830)	(4898.)	(20.08)	(28.906)	(95.021)	(123.927)	(10734.)	(39320.)	50055.
7.511	170.	5.765	(1.132)	(27.06)	(-23.818)	(4973.)	(20.17)	(29.550)	(93.589)	(123.239)	(11036.)	(39139.)	50175.
7.589	175.	6.483	(1.130)	(27.29)	(-23.811)	(5037.)	(20.25)	(30.178)	(92.392)	(122.570)	(11355.)	(38957.)	50293.
7.669	180.	7.268	(1.127)	(27.52)	(-23.803)	(5093.)	(20.34)	(30.790)	(91.288)	(121.918)	(11631.)	(38776.)	50407.
7.752	185.	8.125	(1.124)	(27.76)	(-23.811)	(5142.)	(20.43)	(31.387)	(89.896)	(121.283)	(11924.)	(38595.)	50519.
7.837	190.	9.058	(1.122)	(28.01)	(-23.967)	(5187.)	(20.52)	(31.968)	(88.695)	(120.664)	(12214.)	(38414.)	50628.
7.924	195.	10.072	(1.119)	(28.27)	(-24.027)	(5229.)	(20.61)	(32.536)	(87.523)	(120.060)	(12501.)	(38232.)	50753.

8.014	200.	11.170	(1.116)	(28.53)	(-24.082)	(5274.)	(20.70)	(35.091)	(86.379)	(119.470)	(12786.)	(13809.)	50836.
8.107	205.	12.557	(1.114)	(28.61)	(-24.122)	(5325.)	(20.80)	(35.634)	(85.260)	(118.894)	(13070.)	(13855.)	50935.
8.203	210.	13.659	(1.111)	(29.10)	(-24.138)	(5386.)	(20.89)	(36.167)	(84.166)	(118.331)	(13553.)	(13768.)	51031.
8.301	215.	15.019	(1.109)	(29.41)	(-24.118)	(5465.)	(20.99)	(36.691)	(83.090)	(117.780)	(13634.)	(13789.)	51124.
8.402	220.	16.502	(1.106)	(29.73)	(-24.047)	(5568.)	(21.09)	(35.207)	(82.034)	(117.241)	(13917.)	(13729.)	51218.
8.506	225.	18.093	(1.104)	(30.06)	(-23.909)	(5703.)	(21.19)	(35.719)	(80.995)	(116.713)	(14201.)	(13708.)	51299.
8.613	230.	19.797	(1.102)	(30.42)	(-23.686)	(5880.)	(21.28)	(36.228)	(79.968)	(116.196)	(14487.)	(13684.)	51381.
8.722	235.	21.619	(1.099)	(30.79)	(-23.357)	(6111.)	(21.38)	(36.738)	(78.950)	(115.688)	(14778.)	(13662.)	51460.
8.835	240.	23.564	(1.097)	(31.19)	(-22.896)	(6410.)	(21.49)	(37.254)	(77.937)	(115.190)	(15075.)	(13640.)	51535.
8.951	245.	25.636	(1.095)	(31.61)	(-22.274)	(6792.)	(21.59)	(37.778)	(76.923)	(114.701)	(15381.)	(13625.)	51607.
9.070	250.	27.841	(1.092)	(32.06)	(-21.458)	(7277.)	(21.69)	(38.316)	(75.904)	(114.220)	(15699.)	(135976.)	51674.
9.192	255.	30.183	(1.090)	(32.55)	(-20.407)	(7888.)	(21.79)	(38.876)	(74.872)	(113.748)	(16031.)	(135707.)	51739.
9.317	260.	32.668	(1.088)	(33.07)	(-19.075)	(8651.)	(21.89)	(39.463)	(73.819)	(113.283)	(16383.)	(135416.)	51799.
9.446	265.	35.301	(1.086)	(33.63)	(-17.406)	(9600.)	(22.00)	(40.089)	(72.746)	(112.825)	(16759.)	(135096.)	51855.
9.579	270.	38.086	(1.084)	(34.27)	(-15.734)	(10772.)	(22.10)	(40.763)	(71.611)	(112.374)	(17167.)	(134781.)	51906.
9.715	275.	41.029	(1.081)	(34.96)	(-12.782)	(12216.)	(22.21)	(41.500)	(70.431)	(111.930)	(17613.)	(134344.)	51956.
9.854	280.	44.133	(1.081)	(35.72)	(-9.654)	(13987.)	(22.31)	(42.315)	(69.178)	(111.495)	(18107.)	(133894.)	52001.
9.997	285.	47.404	(1.079)	(36.58)	(-5.836)	(16154.)	(22.42)	(43.230)	(67.852)	(111.062)	(18662.)	(133380.)	52042.
10.145	290.	50.845	(1.077)	(37.54)	(-1.191)	(18803.)	(22.53)	(44.268)	(66.369)	(110.637)	(19293.)	(132787.)	52079.
10.296	295.	54.461	(1.075)	(38.65)	(4.453)	(22037.)	(22.64)	(45.461)	(64.757)	(110.218)	(20017.)	(132096.)	52113.
10.451	300.	58.253	(1.073)	(39.92)	(11.304)	(25987.)	(22.75)	(46.847)	(62.959)	(109.806)	(20859.)	(131284.)	52143.
10.610	305.	(62.226)	(1.071)	(41.40)	(19.626)	(30815.)	(22.87)	(48.475)	(60.925)	(109.401)	(21848.)	(130322.)	52169.
10.774	310.	(66.379)	(1.069)	(43.16)	(29.747)	(36728.)	(23.00)	(50.407)	(58.595)	(109.002)	(23022.)	(129171.)	52193.
10.941	315.	(70.713)	(1.066)	(45.27)	(42.090)	(43991.)	(23.13)	(52.722)	(55.889)	(108.611)	(24430.)	(127783.)	52213.
11.114	320.	(75.227)	(1.063)	(47.86)	(57.200)	(52948.)	(23.26)	(55.524)	(52.705)	(108.229)	(26139.)	(126093.)	52232.
11.291	325.	(79.918)	(1.058)	(51.10)	(75.797)	(64056.)	(23.46)	(58.950)	(48.907)	(107.857)	(28232.)	(124016.)	52249.

NOTE.—Data contained in parentheses were calculated by extrapolation of the functions beyond their range.