Tables of the Dynamic and Kinematic Viscosity of Aqueous NaCl Solutions in the Temperature Range 20–150 °C and the Pressure Range 0.1–35 MPa

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Tabulated values of the dynamic and kinematic viscosity of aqueous sodium chloride solutions are given. The tables cover the temperature range 20–150 °C, the pressure range 0.1–35 MPa and the concentration range 0–6 molal. It is estimated that the accuracy of the tabulated values of ±0.5%. The correlating equations from which the tables were generated are given.

Key words: Aqueous solutions; compilation; reference data; sodium chloride; viscosity.

Contents

Introduction

The viscosity of aqueous NaCl solutions in the temperature range 20–150 °C, the pressure range 0.1–30 MPa and the concentration range 0–5.4 molal was measured and reported by Kestin et al. [7][1]. The experimental results were correlated in terms of pressure, temperature, and concentration in the same reference. The experimental data were obtained by the oscillating-disk method (Kestin et al. [9]). On the basis of an extensive analysis of the experimental technique (Kestin et al. [7,9]) and the data themselves it is estimated that the correlation has an overall accuracy of ±0.5%.

The tabulated values of the dynamic viscosity were computed from the correlation of Kestin et al. [7]. The density needed for the calculation of the kinematic viscosity was taken from the correlation of Rowe and Chou [17]. The correlating equations together with their empirical constants are summarized below. They can be used for interpolation and for limited extrapolation in the pressure-temperature plane.

List of Symbols

Symbol		Units
m	concentration of NaCl in H_2O in molal units	mol/kg
m_s	concentration of NaCl in H_2O at salt saturation	mol/kg
p	pressure	MPa
t	temperature	°C
T	temperature	K
v	specific volume	m^3/kg
w	mass fraction of NaCl in NaCl + H_2O	dimensionless
β	pressure coefficient of the viscosity	$(GPa)^{-1}$
β_w	pressure coefficient for water	$(GPa)^{-1}$
β^E	excess pressure coefficient over that of water, $\beta^E=\beta-\beta_w$	$(GPa)^{-1}$
β_s^E	pressure coefficient at salt saturation	$(GPa)^{-1}$
β^*	reduced excess pressure coefficient, β^E/β_s^E	
μ	dynamic viscosity of the solution at pressure p, temperature t and concentration c	Pa s
μ^0	hypothetical dynamic viscosity of solution at zero pressure	Pa s
μ_w	dynamic viscosity of water = $\mu(p,t,m=0)$	Pa s
ν	kinematic viscosity	mm^2/s
ρ	density	kg/m^3

[1] Figures in brackets indicate literature references.

Correlations

Dynamic Viscosity

The viscosity correlation takes the form

$$\mu(p,t,m) = \mu^0(t,m)\,[1+\beta\,(t,m)\,p]\,. \tag{1}$$

The hypothetical zero-pressure viscosity μ^0 is given by

$$\log_{10}[\mu^0(t,m)/\mu_w^0(t)] = A(m) + B(m)\log_{10}[\mu_w^0(t)/\mu_w^0(20\ ^\circ\mathrm{C})]\,, \tag{2}$$

in which the viscosity of water is derivable from the correlation of Kestin, Sokolov, and Wakeham [10]:

$$\log_{10}[\mu_w^0(t)/\mu^0(20\ ^\circ\mathrm{C})] = \{\sum_{i=1}^{4}\alpha_i\,[(20-t)/(^\circ\mathrm{C})]^i\}/[(96+t)/(^\circ\mathrm{C})]\,. \tag{3}$$

The functions $A(m)$ and $B(m)$ are expressed as

$$A(m) = \sum_{i=1}^{3} a_i\,(m/\mathrm{mol\ kg^{-1}})^2\,, \tag{4}$$

and

$$B(m) = \sum_{i=1}^{3} b_i\,(m/\mathrm{mol\ kg^{-1}})^2\,. \tag{5}$$

The pressure effect appears in eq (1) as a linear factor. The pressure coefficient β can be calculated from

$$\beta(t,m) = \beta_s^E\,\beta^*(m/m_s) + \beta_w(t)\,, \tag{6}$$

where the pressure coefficient for water (Kestin et al. [9]), β_w, is

$$\beta_w(t)/(\mathrm{GPa})^{-1} = \sum_{i=0}^{4}\beta_i\,(t/^\circ\mathrm{C})^i\,. \tag{7}$$

The excess pressure coefficient at NaCl saturation depends only on the temperature and can be computed from

$$\beta_s^E(t)/(\mathrm{GPa})^{-1} = \gamma_0 + \gamma_1\,(t/^\circ\mathrm{C}) - \beta_w(t)\,. \tag{8}$$

The concentration at NaCl saturated (Seidell [18]), m_s, is expressed by

$$m_s(t)/(\mathrm{mol\ kg^{-1}}) = \sum_{i=0}^{2} m_i\,(t/^\circ\mathrm{C})^i\,. \tag{9}$$

Finally, the reduced excess pressure coefficient β^* is given by the sum

$$\beta^*(m/m_s) = \sum_{i=1}^{3}\beta_i\,(m/m_s)^i\,. \tag{10}$$

The preceding equations reproduce the experimental results (Kestin et al. [7]) to within a standard deviation of $\pm 0.5\%$, which is commensurate with the uncertainty in the experimental data.

Kinematic Viscosity

To compute the kinematic viscosity, ν, it is necessary to introduce the density of the solutions over the entire pressure-temperature-concentration domain. The correlation of Rowe and Chou [17] was used for that purpose. This correlation takes the form

$$\rho(p,T;m) \cong \nu(P,T,m)^{-1}\,, \tag{11}$$

where

$$\nu(P,T,m)/(\mathrm{m^3/kg}) = A(T)-B(T)(p/\mathrm{MPa})-C(T)(p/\mathrm{MPa})^2 + w\,D(T) + w^2E(T) - w\,F(T)(p/\mathrm{MPa}) - w^2\,G(T)\,(p/\mathrm{MPa}) - 1/2\,H(T)\,(p/\mathrm{MPa})^2\,. \tag{11a}$$

The functions $A(T)$ and $B(T)$ are given in the form of the following polynomials:

$$A(T) = \sum_{i=-2}^{2} A_i\,(T/\mathrm{K})^i, \tag{12}$$

and

$$B(T) = \sum_{i=-2}^{2} B_i\,(T/\mathrm{K})^i. \tag{13}$$

The functions $C(T)$, $D(T)$, $E(T)$, $F(T)$, $G(T)$ and $H(T)$ are, in turn, polynomials in the absolute temperature, T, and take the general form

$$\phi(T) = \sum_{i=0}^{2}\phi_i\,(T/\mathrm{K})^i. \tag{14}$$

The numerical values of all the empirical constants that appear in the preceding equations are given in the next section.

Empirical Constants in the Correlations

Equation (3):

$\alpha_1 = +1.2378$
$\alpha_2 = -1.303\times10^{-3}$
$\alpha_3 = +3.06\times10^{-6}$
$\alpha_4 = +2.55\times10^{-8}$
μ_w^0 (20 °C)= 1002.0 Pa s

Equation (4):

$a_1 = +3.324\times10^{-2}$
$a_2 = +3.624\times10^{-3}$
$a_3 = -1.879\times10^{-4}$

Equation (5):

$b_1 = -3.96\times10^{-2}$
$b_2 = +1.02\times10^{-2}$
$b_3 = -7.02\times10^{-4}$

Equation (7):

$\beta_0 = -1.297$
$\beta_1 = +5.74\times10^{-2}$
$\beta_2 = -6.97\times10^{-4}$
$\beta_3 = +4.47\times10^{-6}$
$\beta_4 = -1.05\times10^{-8}$

Equation (8):

$\gamma_0 = 0.545$
$\gamma_1 = 2.8\times10^{-3}$

Equation (9):

$m_0 = +6.044$
$m_1 = +2.8\times10^{-3}$
$m_2 = +3.6\times10^{-5}$

Equation (10):

$\beta_1^* = +2.5$
$\beta_2^* = -2.0$
$\beta_3^* = +0.5$

Equations (12, 13):

i	A_i	B_i
-2	$+1.006741\times10^{+2}$	+1.042948
-1	-1.127522	-1.1933677×10^{-2}
0	$+5.916365\times10^{-3}$	$+5.307535\times10^{-5}$
+1	-1.035794×10^{-5}	-1.0688768×10^{-7}
+2	$+9.270048\times10^{-9}$	$+8.492739\times10^{-11}$

Equation (14):

i =	0	1	2
C_i =	$+1.23268\times10^{-9}$	-6.861928×10^{-12}	
D_i =	-2.5166×10^{-3}	$+1.11766\times10^{-5}$	-1.70552×10^{-8}
E_i =	$+2.84851\times10^{-3}$	-1.54305×10^{-5}	$+2.23982\times10^{-8}$
F_i =	-1.5106×10^{-5}	$+8.4605\times10^{-8}$	-1.2715×10^{-10}
G_i =	$+2.7676\times10^{-5}$	-1.5694×10^{-7}	$+2.3102\times10^{-10}$
H_i =	$+6.4633\times10^{-8}$	-4.1671×10^{-10}	$+6.8599\times10^{-13}$

Comments on Tables

The dynamic and kinematic viscosity of NaCl solutions was computed in the pressure range extending from p^* up to 35 MPa. The value of p^* is taken as either 0.1 MPa or the vapor pressure of the solution, whichever is higher. The vapor pressure of aqueous NaCl solutions can be obtained from the correlation of Haas [4]. Owing to the relative insensitivity of the viscosity to pressure, the viscosity at p^* is negligibly different from the hypothetical zero-pressure value, $\mu^0(t,m)$. The temperature range extends from 20–150 °C in intervals of 5 °C and the concentration range extends from 0–6 molal. The concentration intervals are 0.5 mol/kg.

Other Results

A careful search of the literature has uncovered only scanty data on the viscosity of NaCl solutions [16]. Most of the data are for dilute solutions at atmospheric pressure and near room temperature. Thus, they are concentrated in a very small portion of our space of states and would not contribute to the correlation. Measurements on concentrated solutions [1–3,5,6,11–13,19,20] cover a narrow range and claim lower accuracy. A previous publication [7] contains two deviation plots for those data from the correlation presented here, which it would be tedious to reproduce. It suffices to say that general agreement to within ±1.5% can be recorded. In the interim, Pepinov, Yusufova, and Lobkova

[14,15] published measurements up to 350 °C, 30 MPa, and $m=4$. Figure 1 contains a deviation plot from our correlation which shows a maximum deviation of ±2.0% and a standard deviation of ±0.7%; this may be contrasted with a precision of ±1% claimed by the authors.

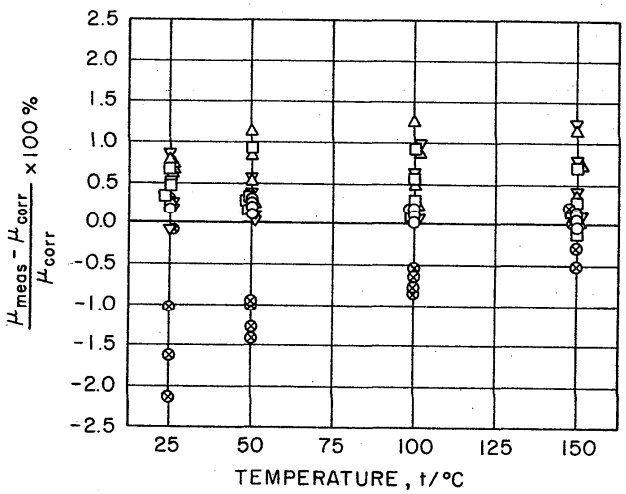

FIGURE 1. Deviation plot of data in [14] from present correlation.

O, m = 0.1728; □, m = 0.9006; Δ, m = 1,9013; ▽, m = 3.0197; ¢, m = 4.2779. Standard deviation ±0.7%.

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TABLE 1

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 0.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1002.0	1000.0	998.1	996.1	994.1	992.1	990.2	988.2
25.0	890.1	889.1	888.1	887.0	886.0	885.0	883.9	882.9
30.0	797.2	796.9	796.5	796.1	795.8	795.4	795.1	794.7
35.0	719.2	719.3	719.4	719.5	719.7	719.8	719.9	720.0
40.0	652.9	653.4	653.8	654.3	654.8	655.2	655.7	656.2
45.0	596.2	596.9	597.6	598.3	599.0	599.7	600.4	601.1
50.0	547.1	548.0	548.9	549.8	550.6	551.5	552.4	553.3
55.0	504.4	505.4	506.4	507.4	508.4	509.4	510.4	511.4
60.0	467.0	468.1	469.1	470.2	471.3	472.4	473.5	474.6
65.0	434.0	435.1	436.2	437.4	438.5	439.7	440.8	442.0
70.0	404.7	405.8	407.0	408.2	409.4	410.6	411.8	413.0
75.0	378.5	379.7	380.9	382.2	383.4	384.6	385.8	387.0
80.0	355.1	356.3	357.6	358.8	360.0	361.3	362.5	363.7
85.0	334.1	335.3	336.5	337.8	339.0	340.3	341.5	342.7
90.0	315.1	316.3	317.5	318.8	320.0	321.3	322.5	323.8
95.0	297.8	299.0	300.3	301.6	302.8	304.1	305.3	306.6
100.0	282.1	283.4	284.6	285.9	287.2	288.4	289.7	290.9
105.0	267.9	269.1	270.4	271.6	272.9	274.1	275.4	276.7
110.0	254.8	256.0	257.3	258.6	259.8	261.1	262.4	263.6
115.0	242.8	244.1	245.3	246.6	247.9	249.2	250.4	251.7
120.0	231.8	233.1	234.4	235.6	236.9	238.2	239.5	240.7
125.0	221.7	223.0	224.3	225.5	226.8	228.1	229.4	230.7
130.0	212.4	213.7	215.0	216.2	217.5	218.8	220.1	221.4
135.0	203.8	205.1	206.4	207.7	208.9	210.2	211.5	212.8
140.0	195.9	197.2	198.4	199.7	201.0	202.3	203.6	204.9
145.0	188.6	189.8	191.1	192.4	193.7	194.9	196.2	197.5
150.0	181.8	183.0	184.3	185.6	186.9	188.1	189.4	190.7

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 2

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 0.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1043.2	1042.1	1041.1	1040.0	1039.0	1037.9	1036.8	1035.8
25.0	928.6	928.3	928.0	927.6	927.3	927.0	926.7	926.3
30.0	833.3	833.5	833.7	833.9	834.1	834.3	834.5	834.6
35.0	753.1	753.6	754.2	754.7	755.3	755.9	756.4	757.0
40.0	684.8	685.7	686.5	687.3	688.1	688.9	689.8	690.6
45.0	626.3	627.3	628.3	629.3	630.3	631.3	632.3	633.3
50.0	575.6	576.7	577.9	579.0	580.1	581.2	582.4	583.5
55.0	531.5	532.6	533.8	535.1	536.3	537.5	538.7	539.9
60.0	492.7	493.9	495.2	496.4	497.7	499.0	500.2	501.5
65.0	458.4	459.7	461.0	462.3	463.6	464.9	466.2	467.5
70.0	428.0	429.3	430.6	431.9	433.2	434.5	435.9	437.2
75.0	400.8	402.1	403.4	404.8	406.1	407.4	408.7	410.1
80.0	376.4	377.8	379.1	380.4	381.7	383.1	384.4	385.7
85.0	354.5	355.8	357.1	358.5	359.8	361.1	362.5	363.8
90.0	334.7	336.0	337.3	338.6	339.9	341.3	342.6	343.9
95.0	316.7	318.0	319.3	320.6	321.9	323.3	324.6	325.9
100.0	300.3	301.6	302.9	304.2	305.5	306.9	308.2	309.5
105.0	285.3	286.6	287.9	289.3	290.6	291.9	293.2	294.5
110.0	271.6	272.9	274.3	275.6	276.9	278.2	279.5	280.8
115.0	259.1	260.4	261.7	263.0	264.3	265.7	267.0	268.3
120.0	247.6	248.9	250.2	251.5	252.8	254.1	255.4	256.8
125.0	237.0	238.2	239.6	240.9	242.2	243.5	244.8	246.1
130.0	227.2	228.5	229.8	231.1	232.4	233.7	235.0	236.4
135.0	218.2	219.4	220.7	222.1	223.4	224.7	226.0	227.3
140.0	209.8	211.1	212.4	213.7	215.0	216.3	217.6	218.9
145.0	202.1	203.4	204.7	206.0	207.3	208.6	209.9	211.2
150.0	194.9	196.2	197.5	198.8	200.1	201.4	202.7	204.0

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 3

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 1.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1090.3	1090.1	1089.9	1089.7	1089.5	1089.3	1089.1	1088.8
25.0	972.0	972.3	972.7	973.0	973.4	973.7	974.0	974.4
30.0	873.5	874.2	874.9	875.6	876.3	877.1	877.8	878.5
35.0	790.4	791.4	792.4	793.3	794.3	795.3	796.3	797.3
40.0	719.7	720.8	722.0	723.2	724.3	725.5	726.7	727.8
45.0	658.9	660.2	661.5	662.8	664.0	665.3	666.6	667.9
50.0	606.3	607.6	609.0	610.3	611.7	613.1	614.4	615.8
55.0	560.3	561.7	563.1	564.5	565.9	567.4	568.8	570.2
60.0	520.0	521.4	522.8	524.2	525.7	527.1	528.5	530.0
65.0	484.3	485.7	487.1	488.6	490.0	491.5	492.9	494.3
70.0	452.5	453.9	455.4	456.8	458.3	459.7	461.2	462.6
75.0	424.1	425.6	427.0	428.4	429.9	431.3	432.8	434.2
80.0	398.7	400.1	401.5	403.0	404.4	405.8	407.2	408.7
85.0	375.7	377.1	378.5	380.0	381.4	382.8	384.2	385.7
90.0	355.0	356.3	357.8	359.2	360.6	362.0	363.4	364.8
95.0	336.1	337.5	338.9	340.3	341.7	343.1	344.5	345.9
100.0	318.9	320.3	321.7	323.1	324.5	325.9	327.2	328.6
105.0	303.3	304.6	306.0	307.4	308.8	310.1	311.5	312.9
110.0	288.9	290.3	291.6	293.0	294.4	295.7	297.1	298.5
115.0	275.7	277.1	278.4	279.8	281.2	282.5	283.9	285.3
120.0	263.6	265.0	266.3	267.7	269.0	270.4	271.7	273.1
125.0	252.5	253.8	255.1	256.5	257.9	259.2	260.6	261.9
130.0	242.2	243.5	244.8	246.2	247.5	248.9	250.2	251.6
135.0	232.7	234.0	235.3	236.7	238.0	239.4	240.7	242.0
140.0	223.9	225.2	226.5	227.9	229.2	230.5	231.9	233.2
145.0	215.8	217.1	218.4	219.7	221.1	222.4	223.7	225.0
150.0	208.2	209.5	210.8	212.2	213.5	214.8	216.1	217.4

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 4

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 1.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1143.5	1144.1	1144.7	1145.3	1145.9	1146.5	1147.1	1147.7
25.0	1020.5	1021.5	1022.5	1023.4	1024.4	1025.4	1026.4	1027.3
30.0	918.0	919.2	920.4	921.6	922.8	924.1	925.3	926.5
35.0	831.4	832.8	834.2	835.6	837.0	838.4	839.8	841.2
40.0	757.7	759.1	760.6	762.1	763.6	765.1	766.7	768.2
45.0	694.2	695.8	697.3	698.9	700.5	702.0	703.6	705.2
50.0	639.3	640.8	642.4	644.0	645.6	647.2	648.8	650.4
55.0	591.2	592.8	594.4	596.0	597.6	599.3	600.9	602.5
60.0	549.0	550.6	552.2	553.8	555.4	557.0	558.6	560.2
65.0	511.6	513.2	514.8	516.4	518.0	519.6	521.2	522.8
70.0	478.4	479.9	481.5	483.1	484.7	486.2	487.8	489.4
75.0	448.6	450.2	451.7	453.3	454.9	456.4	458.0	459.5
80.0	421.9	423.5	425.0	426.5	428.1	429.6	431.1	432.7
85.0	397.9	399.4	400.9	402.4	403.9	405.4	406.9	408.5
90.0	376.1	377.5	379.0	380.5	382.0	383.5	385.0	386.5
95.0	356.3	357.7	359.2	360.7	362.1	363.6	365.1	366.6
100.0	338.2	339.7	341.1	342.6	344.0	345.5	346.9	348.4
105.0	321.8	323.2	324.6	326.0	327.5	328.9	330.4	331.8
110.0	306.7	308.1	309.5	310.9	312.3	313.8	315.2	316.6
115.0	292.8	294.2	295.6	297.0	298.4	299.8	301.2	302.7
120.0	280.0	281.4	282.8	284.2	285.6	287.0	288.4	289.8
125.0	268.3	269.7	271.1	272.4	273.8	275.2	276.6	278.0
130.0	257.5	258.8	260.2	261.6	263.0	264.3	265.7	267.1
135.0	247.5	248.8	250.2	251.5	252.9	254.3	255.7	257.0
140.0	238.2	239.5	240.9	242.3	243.6	245.0	246.3	247.7
145.0	229.6	230.9	232.3	233.7	235.0	236.4	237.7	239.1
150.0	221.7	223.0	224.3	225.7	227.0	228.4	229.7	231.0

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 5

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 2.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1203.2	1204.6	1205.9	1207.3	1208.6	1210.0	1211.3	1212.7
25.0	1074.5	1076.0	1077.6	1079.2	1080.7	1082.3	1083.9	1085.5
30.0	967.0	968.7	970.4	972.1	973.8	975.5	977.3	979.0
35.0	876.3	878.1	879.9	881.7	883.4	885.2	887.0	888.8
40.0	799.0	800.8	802.6	804.4	806.3	808.1	809.9	811.8
45.0	732.4	734.3	736.1	737.9	739.8	741.6	743.5	745.3
50.0	674.7	676.5	678.4	680.2	682.0	683.9	685.7	687.5
55.0	624.3	626.1	627.9	629.7	631.5	633.3	635.2	637.0
60.0	579.9	581.7	583.5	585.3	587.0	588.8	590.6	592.4
65.0	540.7	542.4	544.1	545.9	547.6	549.4	551.1	552.9
70.0	505.7	507.4	509.1	510.8	512.5	514.3	516.0	517.7
75.0	474.5	476.1	477.8	479.5	481.1	482.8	484.5	486.2
80.0	446.4	448.0	449.6	451.3	452.9	454.6	456.2	457.9
85.0	421.0	422.6	424.2	425.8	427.5	429.1	430.7	432.3
90.0	398.1	399.6	401.2	402.8	404.4	406.0	407.6	409.1
95.0	377.2	378.8	380.3	381.9	383.4	385.0	386.5	388.1
100.0	358.2	359.7	361.3	362.8	364.3	365.8	367.4	368.9
105.0	340.9	342.3	343.9	345.4	346.9	348.4	349.9	351.4
110.0	325.0	326.4	327.9	329.4	330.9	332.4	333.8	335.3
115.0	310.4	311.8	313.3	314.7	316.2	317.6	319.1	320.6
120.0	296.9	298.3	299.8	301.2	302.7	304.1	305.6	307.0
125.0	284.5	285.9	287.4	288.8	290.2	291.7	293.1	294.5
130.0	273.1	274.5	275.9	277.3	278.7	280.2	281.6	283.0
135.0	262.5	263.9	265.3	266.7	268.1	269.5	270.9	272.3
140.0	252.8	254.1	255.5	256.9	258.3	259.7	261.1	262.5
145.0	243.7	245.1	246.4	247.8	249.2	250.6	252.0	253.3
150.0	235.3	236.7	238.0	239.4	240.8	242.1	243.5	244.9

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 6

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 2.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1269.7	1271.7	1273.8	1275.8	1277.9	1279.9	1282.0	1284.1
25.0	1134.1	1136.2	1138.4	1140.5	1142.6	1144.8	1146.9	1149.1
30.0	1020.9	1023.1	1025.2	1027.4	1029.6	1031.8	1033.9	1036.1
35.0	925.4	927.5	929.7	931.9	934.0	936.2	938.4	940.6
40.0	843.9	846.0	848.2	850.3	852.5	854.6	856.8	858.9
45.0	773.8	775.9	778.0	780.1	782.2	784.3	786.4	788.5
50.0	712.9	715.0	717.0	719.1	721.2	723.2	725.3	727.4
55.0	659.8	661.7	663.8	665.8	667.8	669.8	671.8	673.8
60.0	613.0	614.9	616.9	618.8	620.8	622.8	624.7	626.7
65.0	571.6	573.4	575.3	577.3	579.2	581.1	583.0	584.9
70.0	534.7	536.5	538.4	540.2	542.1	544.0	545.8	547.7
75.0	501.7	503.5	505.3	507.1	508.9	510.7	512.5	514.3
80.0	472.1	473.8	475.6	477.3	479.1	480.9	482.6	484.4
85.0	445.4	447.0	448.8	450.5	452.2	453.9	455.6	457.3
90.0	421.1	422.8	424.5	426.1	427.8	429.5	431.2	432.8
95.0	399.1	400.7	402.4	404.0	405.7	407.3	408.9	410.6
100.0	379.1	380.6	382.3	383.9	385.5	387.1	388.7	390.3
105.0	360.7	362.3	363.9	365.4	367.0	368.6	370.2	371.7
110.0	343.9	345.5	347.0	348.5	350.1	351.6	353.2	354.7
115.0	328.5	330.0	331.5	333.0	334.6	336.1	337.6	339.1
120.0	314.3	315.8	317.3	318.8	320.3	321.8	323.3	324.8
125.0	301.2	302.7	304.2	305.6	307.1	308.6	310.1	311.6
130.0	289.2	290.6	292.0	293.5	295.0	296.4	297.9	299.4
135.0	278.0	279.4	280.9	282.3	283.7	285.2	286.6	288.1
140.0	267.7	269.1	270.5	271.9	273.4	274.8	276.2	277.6
145.0	258.1	259.5	260.9	262.3	263.7	265.1	266.6	268.0
150.0	249.3	250.6	252.0	253.4	254.8	256.2	257.6	259.0

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 7

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 3.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1343.2	1345.9	1348.6	1351.4	1354.1	1356.8	1359.5	1362.3
25.0	1199.8	1202.4	1205.1	1207.8	1210.4	1213.1	1215.8	1218.5
30.0	1080.0	1082.6	1085.2	1087.8	1090.4	1093.1	1095.7	1098.3
35.0	978.9	981.4	983.9	986.5	989.0	991.6	994.1	996.7
40.0	892.7	895.1	897.6	900.0	902.5	905.0	907.4	909.9
45.0	818.5	820.8	823.2	825.6	828.0	830.3	832.7	835.1
50.0	754.1	756.4	758.7	761.0	763.3	765.6	767.9	770.2
55.0	697.9	700.0	702.2	704.5	706.7	708.9	711.1	713.3
60.0	648.4	650.5	652.6	654.7	656.9	659.0	661.2	663.3
65.0	604.5	606.6	608.6	610.7	612.8	614.8	616.9	619.0
70.0	565.5	567.5	569.5	571.5	573.5	575.5	577.5	579.5
75.0	530.6	532.5	534.5	536.4	538.4	540.3	542.2	544.2
80.0	499.3	501.1	503.0	504.9	506.8	508.6	510.5	512.4
85.0	471.0	472.8	474.6	476.4	478.3	480.1	481.9	483.7
90.0	445.4	447.1	448.9	450.7	452.4	454.2	456.0	457.8
95.0	422.1	423.8	425.5	427.3	429.0	430.7	432.4	434.2
100.0	400.9	402.5	404.2	405.9	407.6	409.3	411.0	412.7
105.0	381.5	383.1	384.8	386.4	388.1	389.7	391.4	393.0
110.0	363.7	365.3	366.9	368.5	370.1	371.8	373.4	375.0
115.0	347.4	349.0	350.5	352.1	353.7	355.3	356.9	358.5
120.0	332.4	333.9	335.5	337.0	338.6	340.1	341.7	343.2
125.0	318.5	320.0	321.6	323.1	324.6	326.2	327.7	329.2
130.0	305.8	307.3	308.8	310.3	311.8	313.3	314.8	316.3
135.0	294.0	295.4	296.9	298.4	299.9	301.4	302.9	304.3
140.0	283.0	284.5	285.9	287.4	288.9	290.3	291.8	293.3
145.0	272.9	274.4	275.8	277.2	278.7	280.1	281.6	283.0
150.0	263.6	265.0	266.4	267.8	269.3	270.7	272.1	273.5

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 8

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 3.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1424.2	1427.5	1430.8	1434.2	1437.5	1440.9	1444.2	1447.6
25.0	1271.7	1274.9	1278.1	1281.3	1284.5	1287.7	1290.9	1294.1
30.0	1144.5	1147.5	1150.5	1153.6	1156.6	1159.7	1162.7	1165.8
35.0	1037.1	1040.0	1042.9	1045.8	1048.7	1051.6	1054.5	1057.4
40.0	945.6	948.3	951.1	953.8	956.6	959.4	962.2	964.9
45.0	866.8	869.4	872.1	874.7	877.4	880.0	882.6	885.3
50.0	798.5	801.0	803.5	806.0	808.6	811.1	813.6	816.2
55.0	738.8	741.2	743.6	746.0	748.4	750.9	753.3	755.7
60.0	686.3	688.5	690.9	693.2	695.5	697.8	700.2	702.5
65.0	639.8	642.0	644.2	646.4	648.7	650.9	653.1	655.4
70.0	598.4	600.5	602.7	604.8	607.0	609.1	611.3	613.4
75.0	561.4	563.4	565.5	567.6	569.7	571.7	573.8	575.9
80.0	528.2	530.1	532.1	534.1	536.1	538.1	540.1	542.1
85.0	498.2	500.1	502.0	504.0	505.9	507.8	509.8	511.7
90.0	471.0	472.9	474.7	476.6	478.5	480.4	482.2	484.1
95.0	446.4	448.1	450.0	451.8	453.6	455.4	457.2	459.1
100.0	423.9	425.6	427.4	429.1	430.9	432.7	434.5	436.2
105.0	403.3	405.0	406.7	408.5	410.2	411.9	413.6	415.4
110.0	384.5	386.1	387.8	389.5	391.2	392.9	394.6	396.3
115.0	367.2	368.8	370.5	372.1	373.8	375.4	377.1	378.7
120.0	351.3	352.9	354.5	356.1	357.7	359.3	361.0	362.6
125.0	336.6	338.2	339.8	341.4	342.9	344.5	346.1	347.7
130.0	323.1	324.6	326.2	327.7	329.3	330.9	332.4	334.0
135.0	310.6	312.1	313.6	315.2	316.7	318.2	319.8	321.3
140.0	299.0	300.5	302.0	303.5	305.0	306.5	308.1	309.6
145.0	288.3	289.8	291.3	292.8	294.2	295.7	297.2	298.7
150.0	278.4	279.8	281.3	282.8	284.2	285.7	287.2	288.6

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 9

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 4.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1512.9	1516.8	1520.7	1524.6	1528.6	1532.5	1536.5	1540.4
25.0	1350.4	1354.0	1357.7	1361.3	1365.0	1368.7	1372.4	1376.1
30.0	1214.8	1218.2	1221.6	1225.1	1228.5	1232.0	1235.5	1238.9
35.0	1100.4	1103.6	1106.8	1110.1	1113.4	1116.6	1119.9	1123.1
40.0	1002.9	1005.9	1009.0	1012.1	1015.1	1018.2	1021.3	1024.4
45.0	919.1	921.9	924.8	927.7	930.7	933.6	936.5	939.4
50.0	846.4	849.1	851.8	854.6	857.4	860.1	862.9	865.6
55.0	782.9	785.4	788.1	790.7	793.3	796.0	798.6	801.2
60.0	727.0	729.5	732.0	734.5	737.0	739.5	742.0	744.5
65.0	677.6	679.9	682.3	684.7	687.1	689.5	691.9	694.3
70.0	633.6	635.9	638.2	640.5	642.8	645.1	647.4	649.7
75.0	594.3	596.5	598.7	600.9	603.1	605.3	607.5	609.7
80.0	559.0	561.1	563.2	565.3	567.4	569.6	571.7	573.8
85.0	527.1	529.1	531.2	533.2	535.3	537.3	539.4	541.4
90.0	498.3	500.2	502.2	504.2	506.2	508.2	510.1	512.1
95.0	472.1	474.0	475.9	477.8	479.7	481.6	483.6	485.5
100.0	448.2	450.0	451.9	453.8	455.6	457.5	459.4	461.2
105.0	426.4	428.2	430.0	431.8	433.6	435.4	437.2	439.1
110.0	406.4	408.1	409.9	411.7	413.4	415.2	417.0	418.7
115.0	388.1	389.8	391.5	393.2	394.9	396.7	398.4	400.1
120.0	371.2	372.8	374.5	376.2	377.9	379.6	381.3	383.0
125.0	355.6	357.3	358.9	360.6	362.2	363.9	365.5	367.2
130.0	341.3	342.9	344.5	346.1	347.7	349.4	351.0	352.6
135.0	328.0	329.6	331.2	332.8	334.4	336.0	337.5	339.1
140.0	315.8	317.3	318.9	320.4	322.0	323.6	325.1	326.7
145.0	304.4	305.9	307.5	309.0	310.5	312.1	313.6	315.1
150.0	293.9	295.4	296.9	298.4	299.9	301.4	303.0	304.5

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 10

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 4.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1609.7	1614.1	1618.5	1623.0	1627.5	1632.0	1636.5	1641.0
25.0	1436.0	1440.0	1444.2	1448.3	1452.5	1456.6	1460.7	1464.9
30.0	1291.2	1294.9	1298.8	1302.6	1306.5	1310.3	1314.2	1318.0
35.0	1169.0	1172.6	1176.1	1179.7	1183.3	1186.9	1190.5	1194.1
40.0	1065.0	1068.3	1071.7	1075.0	1078.4	1081.8	1085.1	1088.5
45.0	975.6	978.7	981.8	985.0	988.2	991.3	994.5	997.7
50.0	898.1	901.0	904.0	907.0	910.0	913.0	915.9	918.9
55.0	830.4	833.1	836.0	838.8	841.6	844.5	847.3	850.2
60.0	770.8	773.5	776.2	778.9	781.6	784.3	787.0	789.7
65.0	718.2	720.7	723.3	725.9	728.4	731.0	733.6	736.1
70.0	671.4	673.8	676.3	678.7	681.2	683.6	686.1	688.5
75.0	629.5	631.8	634.2	636.5	638.9	641.3	643.6	646.0
80.0	591.9	594.2	596.4	598.7	601.0	603.2	605.5	607.7
85.0	558.1	560.2	562.4	564.5	566.7	568.9	571.1	573.3
90.0	527.4	529.4	531.5	533.6	535.7	537.8	539.9	542.1
95.0	499.5	501.5	503.6	505.6	507.6	509.6	511.7	513.7
100.0	474.2	476.1	478.0	480.0	482.0	483.9	485.9	487.9
105.0	451.0	452.8	454.7	456.7	458.6	460.5	462.4	464.3
110.0	429.7	431.6	433.4	435.3	437.1	439.0	440.8	442.7
115.0	410.3	412.0	413.8	415.6	417.4	419.3	421.1	422.9
120.0	392.3	394.1	395.8	397.6	399.4	401.1	402.9	404.6
125.0	375.8	377.5	379.2	381.0	382.7	384.4	386.1	387.8
130.0	360.6	362.2	363.9	365.6	367.3	369.0	370.7	372.4
135.0	346.5	348.1	349.8	351.4	353.1	354.7	356.4	358.1
140.0	333.5	335.1	336.7	338.3	340.0	341.6	343.2	344.8
145.0	321.5	323.0	324.6	326.2	327.8	329.4	331.0	332.6
150.0	310.3	311.8	313.4	315.0	316.5	318.1	319.7	321.2

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 11

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 5.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1714.8	1719.7	1724.6	1729.6	1734.6	1739.6	1744.6	1749.6
25.0	1528.9	1533.3	1537.9	1542.5	1547.0	1551.6	1556.2	1560.7
30.0	1373.9	1378.1	1382.3	1386.5	1390.7	1394.9	1399.1	1403.4
35.0	1243.4	1247.2	1251.1	1255.0	1258.9	1262.9	1266.8	1270.7
40.0	1132.2	1135.8	1139.4	1143.1	1146.7	1150.4	1154.0	1157.7
45.0	1036.6	1040.0	1043.4	1046.9	1050.3	1053.7	1057.1	1060.5
50.0	953.9	957.0	960.3	963.5	966.7	969.9	973.2	976.4
55.0	881.6	884.6	887.7	890.7	893.8	896.8	899.8	902.9
60.0	818.1	821.0	823.8	826.7	829.6	832.5	835.4	838.3
65.0	762.0	764.7	767.4	770.2	772.9	775.7	778.4	781.2
70.0	712.1	714.6	717.3	719.9	722.5	725.1	727.7	730.4
75.0	667.5	669.9	672.4	674.9	677.4	680.0	682.5	685.0
80.0	627.4	629.8	632.2	634.6	637.0	639.4	641.8	644.2
85.0	591.3	593.6	595.9	598.2	600.5	602.8	605.1	607.5
90.0	558.7	560.8	563.1	565.3	567.5	569.7	572.0	574.2
95.0	529.0	531.1	533.3	535.4	537.6	539.7	541.9	544.0
100.0	502.0	504.0	506.1	508.2	510.3	512.3	514.4	516.5
105.0	477.3	479.3	481.3	483.3	485.3	487.4	489.4	491.4
110.0	454.8	456.7	458.6	460.6	462.5	464.5	466.4	468.4
115.0	434.0	435.9	437.8	439.7	441.6	443.5	445.4	447.3
120.0	415.0	416.8	418.6	420.5	422.3	424.2	426.0	427.9
125.0	397.4	399.2	401.0	402.8	404.6	406.4	408.2	410.0
130.0	381.2	383.0	384.7	386.5	388.3	390.0	391.8	393.6
135.0	366.3	368.0	369.7	371.4	373.2	374.9	376.6	378.3
140.0	352.5	354.1	355.8	357.5	359.2	360.9	362.6	364.3
145.0	339.7	341.3	343.0	344.6	346.3	347.9	349.6	351.3
150.0	327.8	329.4	331.1	332.7	334.3	335.9	337.6	339.2

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 12

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 5.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1828.4	1833.8	1839.2	1844.6	1850.1	1855.5	1861.0	1866.4
25.0	1629.3	1634.2	1639.1	1644.1	1649.1	1654.0	1659.0	1664.0
30.0	1463.4	1467.9	1472.5	1477.0	1481.6	1486.2	1490.7	1495.3
35.0	1323.7	1327.8	1332.1	1336.3	1340.5	1344.8	1349.0	1353.2
40.0	1204.8	1208.7	1212.6	1216.5	1220.5	1224.4	1228.3	1232.3
45.0	1102.7	1106.3	1109.9	1113.6	1117.3	1121.0	1124.7	1128.3
50.0	1014.2	1017.6	1021.1	1024.5	1028.0	1031.4	1034.9	1038.3
55.0	937.0	940.2	943.5	946.7	950.0	953.3	956.5	959.8
60.0	869.2	872.3	875.3	878.4	881.5	884.6	887.7	890.8
65.0	809.3	812.2	815.1	818.0	821.0	823.9	826.8	829.8
70.0	756.0	758.8	761.6	764.4	767.2	769.9	772.7	775.5
75.0	708.5	711.1	713.7	716.4	719.1	721.7	724.4	727.1
80.0	665.8	668.3	670.8	673.4	675.9	678.5	681.0	683.6
85.0	627.3	629.7	632.1	634.6	637.0	639.5	641.9	644.4
90.0	592.5	594.8	597.1	599.5	601.9	604.2	606.6	608.9
95.0	560.9	563.1	565.4	567.6	569.9	572.2	574.5	576.7
100.0	532.1	534.2	536.4	538.6	540.8	543.0	545.2	547.4
105.0	505.8	507.9	510.0	512.2	514.3	516.4	518.5	520.7
110.0	481.8	483.8	485.9	487.9	490.0	492.1	494.1	496.2
115.0	459.7	461.7	463.7	465.7	467.7	469.7	471.7	473.7
120.0	439.4	441.4	443.3	445.3	447.2	449.1	451.1	453.0
125.0	420.8	422.6	424.5	426.4	428.3	430.2	432.1	434.0
130.0	403.6	405.4	407.2	409.1	410.9	412.8	414.6	416.5
135.0	387.7	389.4	391.2	393.0	394.9	396.7	398.5	400.3
140.0	373.0	374.7	376.5	378.2	380.0	381.8	383.5	385.3
145.0	359.4	361.1	362.8	364.5	366.3	368.0	369.7	371.5
150.0	346.8	348.4	350.1	351.8	353.5	355.2	356.9	358.6

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 13

DYNAMIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 6.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C				VISCOSITY, MICRO PA S				
20.0	1950.8	1956.5	1962.4	1968.3	1974.1	1980.0	1985.8	1991.7
25.0	1737.5	1742.7	1748.1	1753.4	1758.7	1764.1	1769.4	1774.8
30.0	1559.9	1564.7	1569.6	1574.5	1579.4	1584.4	1589.3	1594.2
35.0	1410.4	1414.9	1419.4	1423.9	1428.5	1433.0	1437.5	1442.0
40.0	1283.2	1287.3	1291.6	1295.8	1300.0	1304.2	1308.4	1312.6
45.0	1174.0	1177.9	1181.8	1185.7	1189.7	1193.6	1197.5	1201.5
50.0	1079.5	1083.1	1086.8	1090.5	1094.2	1097.9	1101.6	1105.2
55.0	997.0	1000.4	1003.9	1007.4	1010.8	1014.3	1017.8	1021.3
60.0	924.6	927.8	931.1	934.4	937.7	941.0	944.3	947.6
65.0	860.6	863.6	866.8	869.9	873.0	876.1	879.3	882.4
70.0	803.7	806.6	809.6	812.6	815.5	818.5	821.5	824.5
75.0	752.9	755.7	758.5	761.4	764.2	767.1	769.9	772.7
80.0	707.4	710.0	712.7	715.5	718.2	720.9	723.6	726.3
85.0	666.3	668.9	671.5	674.1	676.7	679.3	681.9	684.5
90.0	629.2	631.6	634.1	636.7	639.2	641.7	644.2	646.7
95.0	595.5	597.9	600.3	602.7	605.1	607.5	609.9	612.3
100.0	564.8	567.1	569.4	571.8	574.1	576.4	578.8	581.1
105.0	536.8	539.0	541.3	543.5	545.8	548.1	550.3	552.6
110.0	511.2	513.3	515.5	517.7	519.9	522.1	524.3	526.4
115.0	487.7	489.8	491.9	494.0	496.1	498.3	500.4	502.5
120.0	466.1	468.1	470.2	472.2	474.3	476.4	478.4	480.5
125.0	446.2	448.2	450.2	452.2	454.2	456.2	458.2	460.2
130.0	427.9	429.8	431.8	433.7	435.7	437.6	439.6	441.5
135.0	411.0	412.8	414.7	416.6	418.6	420.5	422.4	424.3
140.0	395.3	397.1	399.0	400.9	402.7	404.6	406.5	408.3
145.0	380.8	382.6	384.5	386.3	388.1	389.9	391.8	393.6
150.0	367.5	369.2	371.0	372.8	374.6	376.4	378.1	379.9

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 14

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 0.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.0037	0.9995	0.9953	0.9911	0.9869	0.9828	0.9788	0.9748
25.0	0.8927	0.8897	0.8867	0.8837	0.8807	0.8778	0.8749	0.8721
30.0	0.8007	0.7985	0.7964	0.7943	0.7922	0.7902	0.7882	0.7862
35.0	0.7235	0.7220	0.7205	0.7191	0.7176	0.7163	0.7149	0.7136
40.0	0.6580	0.6570	0.6561	0.6551	0.6542	0.6533	0.6524	0.6515
45.0	0.6020	0.6014	0.6008	0.6002	0.5997	0.5991	0.5986	0.5981
50.0	0.5537	0.5534	0.5531	0.5527	0.5525	0.5522	0.5520	0.5517
55.0	0.5117	0.5116	0.5115	0.5114	0.5113	0.5113	0.5112	0.5112
60.0	0.4750	0.4750	0.4750	0.4751	0.4752	0.4753	0.4754	0.4756
65.0	0.4426	0.4427	0.4429	0.4431	0.4433	0.4435	0.4438	0.4440
70.0	0.4139	0.4141	0.4144	0.4147	0.4150	0.4153	0.4157	0.4160
75.0	0.3883	0.3886	0.3890	0.3894	0.3897	0.3901	0.3906	0.3910
80.0	0.3654	0.3658	0.3662	0.3667	0.3671	0.3676	0.3681	0.3686
85.0	0.3449	0.3453	0.3458	0.3463	0.3468	0.3473	0.3478	0.3484
90.0	0.3264	0.3269	0.3274	0.3279	0.3285	0.3290	0.3296	0.3302
95.0	0.3096	0.3101	0.3107	0.3113	0.3118	0.3124	0.3131	0.3137
100.0	0.2944	0.2950	0.2956	0.2962	0.2968	0.2974	0.2981	0.2987
105.0	0.2805	0.2811	0.2818	0.2824	0.2831	0.2837	0.2844	0.2851
110.0	0.2679	0.2686	0.2692	0.2699	0.2705	0.2712	0.2719	0.2726
115.0	0.2564	0.2570	0.2577	0.2584	0.2591	0.2598	0.2606	0.2613
120.0	0.2458	0.2465	0.2472	0.2479	0.2486	0.2494	0.2501	0.2509
125.0	0.2361	0.2368	0.2376	0.2383	0.2390	0.2398	0.2406	0.2413
130.0	0.2272	0.2280	0.2287	0.2295	0.2302	0.2310	0.2318	0.2326
135.0	0.2191	0.2198	0.2206	0.2213	0.2221	0.2229	0.2237	0.2245
140.0	0.2116	0.2123	0.2131	0.2139	0.2147	0.2155	0.2163	0.2171
145.0	0.2047	0.2054	0.2062	0.2070	0.2078	0.2086	0.2094	0.2102
150.0	0.1983	0.1991	0.1999	0.2006	0.2014	0.2023	0.2031	0.2039

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 15

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 0.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.0244	1.0211	1.0179	1.0147	1.0116	1.0085	1.0054	1.0024
25.0	0.9131	0.9108	0.9086	0.9063	0.9041	0.9020	0.8999	0.8978
30.0	0.8206	0.8191	0.8175	0.8160	0.8145	0.8131	0.8117	0.8103
35.0	0.7429	0.7419	0.7409	0.7399	0.7389	0.7380	0.7371	0.7363
40.0	0.6769	0.6763	0.6757	0.6751	0.6745	0.6740	0.6735	0.6730
45.0	0.6204	0.6200	0.6197	0.6194	0.6192	0.6189	0.6187	0.6185
50.0	0.5715	0.5714	0.5713	0.5712	0.5712	0.5711	0.5711	0.5712
55.0	0.5289	0.5290	0.5290	0.5291	0.5293	0.5294	0.5296	0.5297
60.0	0.4916	0.4918	0.4920	0.4922	0.4924	0.4927	0.4930	0.4933
65.0	0.4586	0.4589	0.4592	0.4595	0.4599	0.4603	0.4606	0.4610
70.0	0.4294	0.4298	0.4301	0.4305	0.4310	0.4314	0.4319	0.4323
75.0	0.4033	0.4038	0.4042	0.4047	0.4051	0.4057	0.4062	0.4067
80.0	0.3800	0.3805	0.3810	0.3815	0.3820	0.3825	0.3831	0.3837
85.0	0.3590	0.3595	0.3600	0.3606	0.3612	0.3617	0.3623	0.3630
90.0	0.3400	0.3406	0.3411	0.3417	0.3423	0.3430	0.3436	0.3442
95.0	0.3228	0.3234	0.3240	0.3246	0.3253	0.3259	0.3266	0.3273
100.0	0.3072	0.3078	0.3085	0.3091	0.3098	0.3104	0.3111	0.3118
105.0	0.2930	0.2936	0.2943	0.2950	0.2956	0.2963	0.2971	0.2978
110.0	0.2800	0.2807	0.2813	0.2820	0.2827	0.2835	0.2842	0.2849
115.0	0.2681	0.2688	0.2695	0.2702	0.2709	0.2717	0.2724	0.2732
120.0	0.2572	0.2579	0.2586	0.2594	0.2601	0.2609	0.2617	0.2624
125.0	0.2472	0.2479	0.2487	0.2494	0.2502	0.2510	0.2518	0.2526
130.0	0.2380	0.2388	0.2395	0.2403	0.2411	0.2419	0.2427	0.2435
135.0	0.2296	0.2303	0.2311	0.2319	0.2327	0.2335	0.2343	0.2351
140.0	0.2218	0.2226	0.2233	0.2241	0.2249	0.2257	0.2266	0.2274
145.0	0.2146	0.2154	0.2162	0.2170	0.2178	0.2186	0.2194	0.2203
150.0	0.2081	0.2088	0.2096	0.2104	0.2112	0.2120	0.2129	0.2137

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 16

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 1.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.0506	1.0482	1.0459	1.0436	1.0413	1.0391	1.0370	1.0348
25.0	0.9380	0.9364	0.9349	0.9333	0.9318	0.9304	0.9289	0.9275
30.0	0.8443	0.8433	0.8423	0.8413	0.8404	0.8395	0.8386	0.8378
35.0	0.7655	0.7649	0.7643	0.7637	0.7632	0.7627	0.7622	0.7618
40.0	0.6984	0.6981	0.6978	0.6976	0.6974	0.6972	0.6970	0.6969
45.0	0.6408	0.6408	0.6407	0.6407	0.6407	0.6408	0.6408	0.6409
50.0	0.5910	0.5911	0.5913	0.5914	0.5916	0.5918	0.5920	0.5923
55.0	0.5476	0.5478	0.5481	0.5484	0.5487	0.5490	0.5493	0.5497
60.0	0.5094	0.5098	0.5101	0.5105	0.5109	0.5113	0.5118	0.5123
65.0	0.4758	0.4762	0.4766	0.4771	0.4775	0.4780	0.4785	0.4791
70.0	0.4458	0.4463	0.4468	0.4473	0.4478	0.4484	0.4490	0.4495
75.0	0.4191	0.4196	0.4202	0.4207	0.4213	0.4219	0.4225	0.4231
80.0	0.3951	0.3957	0.3963	0.3969	0.3975	0.3981	0.3988	0.3994
85.0	0.3736	0.3742	0.3748	0.3754	0.3760	0.3767	0.3774	0.3781
90.0	0.3541	0.3547	0.3553	0.3560	0.3566	0.3573	0.3580	0.3587
95.0	0.3364	0.3370	0.3377	0.3383	0.3390	0.3397	0.3405	0.3412
100.0	0.3203	0.3210	0.3216	0.3223	0.3230	0.3238	0.3245	0.3252
105.0	0.3056	0.3063	0.3070	0.3077	0.3084	0.3092	0.3099	0.3107
110.0	0.2922	0.2929	0.2936	0.2944	0.2951	0.2958	0.2966	0.2974
115.0	0.2799	0.2807	0.2814	0.2821	0.2829	0.2836	0.2844	0.2852
120.0	0.2687	0.2694	0.2702	0.2709	0.2717	0.2725	0.2732	0.2740
125.0	0.2583	0.2591	0.2598	0.2606	0.2614	0.2622	0.2630	0.2638
130.0	0.2488	0.2496	0.2503	0.2511	0.2519	0.2527	0.2535	0.2543
135.0	0.2401	0.2408	0.2416	0.2424	0.2432	0.2440	0.2448	0.2456
140.0	0.2320	0.2328	0.2335	0.2343	0.2351	0.2360	0.2368	0.2376
145.0	0.2245	0.2253	0.2261	0.2269	0.2277	0.2285	0.2294	0.2302
150.0	0.2177	0.2185	0.2193	0.2201	0.2209	0.2217	0.2225	0.2234

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 17

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 1.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.0824	1.0808	1.0793	1.0778	1.0763	1.0749	1.0735	1.0722
25.0	0.9675	0.9666	0.9656	0.9647	0.9638	0.9630	0.9622	0.9614
30.0	0.8718	0.8713	0.8708	0.8703	0.8699	0.8694	0.8690	0.8687
35.0	0.7912	0.7910	0.7908	0.7906	0.7905	0.7904	0.7903	0.7902
40.0	0.7226	0.7226	0.7226	0.7227	0.7228	0.7229	0.7230	0.7232
45.0	0.6636	0.6638	0.6640	0.6642	0.6645	0.6648	0.6651	0.6654
50.0	0.6125	0.6128	0.6131	0.6135	0.6139	0.6143	0.6147	0.6152
55.0	0.5679	0.5683	0.5687	0.5692	0.5697	0.5702	0.5707	0.5712
60.0	0.5287	0.5292	0.5297	0.5302	0.5308	0.5313	0.5319	0.5325
65.0	0.4941	0.4946	0.4951	0.4957	0.4963	0.4969	0.4976	0.4983
70.0	0.4632	0.4638	0.4644	0.4650	0.4657	0.4663	0.4670	0.4677
75.0	0.4357	0.4363	0.4370	0.4376	0.4383	0.4390	0.4397	0.4404
80.0	0.4110	0.4117	0.4123	0.4130	0.4137	0.4144	0.4151	0.4159
85.0	0.3888	0.3894	0.3901	0.3908	0.3915	0.3922	0.3930	0.3937
90.0	0.3686	0.3693	0.3700	0.3707	0.3714	0.3722	0.3729	0.3737
95.0	0.3504	0.3510	0.3518	0.3525	0.3532	0.3540	0.3547	0.3555
100.0	0.3337	0.3344	0.3351	0.3359	0.3366	0.3374	0.3382	0.3390
105.0	0.3185	0.3193	0.3200	0.3207	0.3215	0.3223	0.3231	0.3239
110.0	0.3047	0.3054	0.3061	0.3069	0.3077	0.3085	0.3093	0.3101
115.0	0.2919	0.2927	0.2934	0.2942	0.2950	0.2958	0.2966	0.2974
120.0	0.2803	0.2810	0.2818	0.2826	0.2834	0.2842	0.2850	0.2858
125.0	0.2695	0.2703	0.2711	0.2719	0.2726	0.2735	0.2743	0.2751
130.0	0.2596	0.2604	0.2612	0.2620	0.2628	0.2636	0.2644	0.2653
135.0	0.2505	0.2513	0.2521	0.2529	0.2537	0.2545	0.2554	0.2562
140.0	0.2421	0.2429	0.2437	0.2445	0.2453	0.2462	0.2470	0.2478
145.0	0.2344	0.2352	0.2360	0.2368	0.2376	0.2384	0.2393	0.2401
150.0	0.2273	0.2280	0.2289	0.2297	0.2305	0.2313	0.2321	0.2330

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 18

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 2.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.1198	1.1190	1.1181	1.1173	1.1166	1.1159	1.1152	1.1146
25.0	1.0017	1.0013	1.0009	1.0005	1.0002	0.9999	0.9997	0.9995
30.0	0.9032	0.9031	0.9031	0.9030	0.9030	0.9031	0.9031	0.9032
35.0	0.8202	0.8203	0.8205	0.8207	0.8209	0.8212	0.8214	0.8217
40.0	0.7495	0.7498	0.7501	0.7505	0.7508	0.7512	0.7517	0.7522
45.0	0.6887	0.6891	0.6895	0.6900	0.6905	0.6910	0.6916	0.6922
50.0	0.6360	0.6365	0.6370	0.6376	0.6381	0.6388	0.6394	0.6401
55.0	0.5899	0.5905	0.5911	0.5917	0.5924	0.5930	0.5937	0.5944
60.0	0.5494	0.5500	0.5507	0.5514	0.5521	0.5528	0.5535	0.5543
65.0	0.5136	0.5143	0.5150	0.5157	0.5164	0.5171	0.5179	0.5187
70.0	0.4818	0.4824	0.4831	0.4839	0.4846	0.4854	0.4862	0.4870
75.0	0.4533	0.4540	0.4547	0.4554	0.4562	0.4570	0.4578	0.4586
80.0	0.4277	0.4284	0.4292	0.4299	0.4307	0.4315	0.4323	0.4331
85.0	0.4047	0.4054	0.4061	0.4069	0.4077	0.4085	0.4093	0.4101
90.0	0.3838	0.3845	0.3853	0.3860	0.3868	0.3876	0.3885	0.3893
95.0	0.3648	0.3656	0.3663	0.3671	0.3679	0.3687	0.3695	0.3704
100.0	0.3476	0.3483	0.3491	0.3499	0.3507	0.3515	0.3523	0.3532
105.0	0.3318	0.3326	0.3334	0.3341	0.3349	0.3358	0.3366	0.3374
110.0	0.3174	0.3182	0.3190	0.3197	0.3206	0.3214	0.3222	0.3231
115.0	0.3042	0.3050	0.3057	0.3065	0.3074	0.3082	0.3090	0.3099
120.0	0.2920	0.2928	0.2936	0.2944	0.2952	0.2961	0.2969	0.2978
125.0	0.2809	0.2817	0.2825	0.2833	0.2841	0.2849	0.2858	0.2866
130.0	0.2706	0.2714	0.2722	0.2730	0.2738	0.2746	0.2755	0.2763
135.0	0.2611	0.2619	0.2627	0.2635	0.2643	0.2652	0.2660	0.2669
140.0	0.2524	0.2531	0.2540	0.2548	0.2556	0.2564	0.2573	0.2581
145.0	0.2443	0.2451	0.2459	0.2467	0.2475	0.2484	0.2492	0.2501
150.0	0.2368	0.2376	0.2384	0.2393	0.2401	0.2409	0.2418	0.2426

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 19

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 2.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.1629	1.1627	1.1625	1.1623	1.1622	1.1621	1.1621	1.1621
25.0	1.0406	1.0407	1.0408	1.0410	1.0411	1.0414	1.0416	1.0419
30.0	0.9386	0.9389	0.9393	0.9396	0.9400	0.9404	0.9409	0.9414
35.0	0.8526	0.8530	0.8535	0.8541	0.8546	0.8552	0.8558	0.8564
40.0	0.7793	0.7798	0.7804	0.7811	0.7817	0.7824	0.7831	0.7838
45.0	0.7162	0.7169	0.7175	0.7182	0.7190	0.7197	0.7205	0.7213
50.0	0.6616	0.6622	0.6630	0.6637	0.6645	0.6653	0.6661	0.6670
55.0	0.6138	0.6145	0.6153	0.6161	0.6169	0.6177	0.6185	0.6194
60.0	0.5718	0.5725	0.5733	0.5741	0.5749	0.5758	0.5767	0.5776
65.0	0.5346	0.5354	0.5362	0.5370	0.5378	0.5387	0.5396	0.5405
70.0	0.5015	0.5023	0.5031	0.5039	0.5048	0.5056	0.5065	0.5074
75.0	0.4719	0.4727	0.4735	0.4743	0.4752	0.4761	0.4769	0.4779
80.0	0.4453	0.4461	0.4469	0.4478	0.4486	0.4495	0.4504	0.4513
85.0	0.4214	0.4222	0.4230	0.4238	0.4247	0.4255	0.4264	0.4273
90.0	0.3997	0.4004	0.4013	0.4021	0.4029	0.4038	0.4047	0.4056
95.0	0.3799	0.3807	0.3816	0.3824	0.3832	0.3841	0.3850	0.3859
100.0	0.3620	0.3628	0.3636	0.3644	0.3653	0.3661	0.3670	0.3679
105.0	0.3456	0.3464	0.3472	0.3480	0.3489	0.3497	0.3506	0.3515
110.0	0.3306	0.3314	0.3322	0.3330	0.3339	0.3347	0.3356	0.3365
115.0	0.3168	0.3176	0.3184	0.3192	0.3201	0.3209	0.3218	0.3227
120.0	0.3041	0.3049	0.3058	0.3066	0.3074	0.3083	0.3092	0.3100
125.0	0.2925	0.2933	0.2941	0.2949	0.2958	0.2966	0.2975	0.2984
130.0	0.2818	0.2826	0.2834	0.2842	0.2851	0.2859	0.2868	0.2876
135.0	0.2719	0.2727	0.2735	0.2743	0.2752	0.2760	0.2769	0.2777
140.0	0.2627	0.2635	0.2644	0.2652	0.2660	0.2669	0.2677	0.2686
145.0	0.2543	0.2551	0.2559	0.2568	0.2576	0.2584	0.2593	0.2602
150.0	0.2465	0.2473	0.2481	0.2490	0.2498	0.2506	0.2515	0.2524

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 20

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 3.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.2117	1.2120	1.2124	1.2128	1.2133	1.2138	1.2143	1.2149
25.0	1.0843	1.0849	1.0854	1.0860	1.0867	1.0874	1.0881	1.0888
30.0	0.9781	0.9788	0.9795	0.9802	0.9810	0.9818	0.9826	0.9835
35.0	0.8885	0.8892	0.8900	0.8908	0.8917	0.8926	0.8935	0.8944
40.0	0.8121	0.8129	0.8138	0.8146	0.8155	0.8165	0.8174	0.8184
45.0	0.7464	0.7473	0.7481	0.7490	0.7500	0.7509	0.7519	0.7529
50.0	0.6895	0.6903	0.6912	0.6921	0.6931	0.6941	0.6951	0.6961
55.0	0.6397	0.6405	0.6414	0.6424	0.6433	0.6443	0.6453	0.6464
60.0	0.5959	0.5967	0.5977	0.5986	0.5995	0.6005	0.6015	0.6026
65.0	0.5571	0.5580	0.5589	0.5598	0.5608	0.5618	0.5628	0.5638
70.0	0.5226	0.5235	0.5244	0.5253	0.5263	0.5272	0.5282	0.5292
75.0	0.4918	0.4926	0.4935	0.4944	0.4954	0.4963	0.4973	0.4983
80.0	0.4640	0.4649	0.4658	0.4667	0.4676	0.4686	0.4695	0.4705
85.0	0.4390	0.4399	0.4408	0.4417	0.4426	0.4435	0.4445	0.4455
90.0	0.4164	0.4172	0.4181	0.4190	0.4199	0.4208	0.4218	0.4227
95.0	0.3958	0.3966	0.3975	0.3984	0.3993	0.4002	0.4012	0.4021
100.0	0.3771	0.3779	0.3788	0.3796	0.3805	0.3814	0.3824	0.3833
105.0	0.3599	0.3608	0.3616	0.3625	0.3634	0.3643	0.3652	0.3661
110.0	0.3443	0.3451	0.3459	0.3468	0.3477	0.3486	0.3495	0.3504
115.0	0.3299	0.3307	0.3315	0.3324	0.3333	0.3342	0.3351	0.3360
120.0	0.3166	0.3175	0.3183	0.3192	0.3201	0.3209	0.3218	0.3227
125.0	0.3045	0.3053	0.3061	0.3070	0.3079	0.3088	0.3096	0.3105
130.0	0.2932	0.2941	0.2949	0.2958	0.2966	0.2975	0.2984	0.2993
135.0	0.2829	0.2837	0.2846	0.2854	0.2863	0.2872	0.2880	0.2889
140.0	0.2733	0.2742	0.2750	0.2759	0.2767	0.2776	0.2785	0.2793
145.0	0.2645	0.2653	0.2662	0.2670	0.2679	0.2688	0.2696	0.2705
150.0	0.2564	0.2572	0.2580	0.2589	0.2597	0.2606	0.2614	0.2623

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 21

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 3.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.2663	1.2671	1.2680	1.2689	1.2699	1.2709	1.2719	1.2730
25.0	1.1330	1.1339	1.1349	1.1359	1.1370	1.1380	1.1392	1.1403
30.0	1.0218	1.0228	1.0238	1.0249	1.0260	1.0271	1.0283	1.0295
35.0	0.9281	0.9291	0.9301	0.9312	0.9323	0.9335	0.9347	0.9359
40.0	0.8481	0.8492	0.8502	0.8513	0.8525	0.8536	0.8548	0.8560
45.0	0.7794	0.7804	0.7815	0.7826	0.7837	0.7849	0.7861	0.7873
50.0	0.7198	0.7208	0.7219	0.7230	0.7241	0.7252	0.7264	0.7276
55.0	0.6677	0.6687	0.6698	0.6708	0.6719	0.6731	0.6742	0.6754
60.0	0.6219	0.6229	0.6239	0.6250	0.6261	0.6272	0.6283	0.6294
65.0	0.5813	0.5823	0.5833	0.5844	0.5854	0.5865	0.5876	0.5888
70.0	0.5452	0.5462	0.5472	0.5482	0.5493	0.5503	0.5514	0.5525
75.0	0.5130	0.5139	0.5149	0.5159	0.5169	0.5180	0.5190	0.5201
80.0	0.4840	0.4849	0.4859	0.4868	0.4879	0.4889	0.4899	0.4910
85.0	0.4578	0.4587	0.4597	0.4606	0.4616	0.4626	0.4637	0.4647
90.0	0.4341	0.4350	0.4359	0.4369	0.4379	0.4389	0.4399	0.4409
95.0	0.4126	0.4135	0.4144	0.4153	0.4163	0.4173	0.4183	0.4193
100.0	0.3929	0.3938	0.3948	0.3957	0.3966	0.3976	0.3986	0.3996
105.0	0.3750	0.3759	0.3768	0.3777	0.3787	0.3796	0.3806	0.3816
110.0	0.3586	0.3595	0.3604	0.3613	0.3622	0.3632	0.3641	0.3651
115.0	0.3435	0.3444	0.3453	0.3462	0.3471	0.3481	0.3490	0.3499
120.0	0.3297	0.3306	0.3314	0.3323	0.3333	0.3342	0.3351	0.3360
125.0	0.3170	0.3178	0.3187	0.3196	0.3205	0.3214	0.3223	0.3232
130.0	0.3052	0.3061	0.3069	0.3078	0.3087	0.3096	0.3105	0.3114
135.0	0.2944	0.2952	0.2961	0.2970	0.2978	0.2987	0.2996	0.3006
140.0	0.2844	0.2852	0.2861	0.2869	0.2878	0.2887	0.2896	0.2905
145.0	0.2751	0.2760	0.2768	0.2777	0.2786	0.2794	0.2803	0.2812
150.0	0.2666	0.2674	0.2683	0.2691	0.2700	0.2709	0.2717	0.2726

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 22

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 4.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.3269	1.3281	1.3294	1.3308	1.3322	1.3337	1.3351	1.3367
25.0	1.1867	1.1880	1.1894	1.1907	1.1921	1.1936	1.1951	1.1966
30.0	1.0699	1.0712	1.0725	1.0739	1.0753	1.0767	1.0782	1.0797
35.0	0.9714	0.9727	0.9740	0.9753	0.9767	0.9781	0.9795	0.9810
40.0	0.8875	0.8887	0.8900	0.8913	0.8926	0.8940	0.8954	0.8969
45.0	0.8153	0.8165	0.8178	0.8190	0.8203	0.8217	0.8230	0.8244
50.0	0.7527	0.7539	0.7551	0.7564	0.7576	0.7589	0.7603	0.7616
55.0	0.6981	0.6992	0.7004	0.7016	0.7028	0.7041	0.7054	0.7067
60.0	0.6500	0.6511	0.6522	0.6534	0.6546	0.6559	0.6571	0.6584
65.0	0.6074	0.6085	0.6096	0.6108	0.6120	0.6132	0.6144	0.6156
70.0	0.5696	0.5706	0.5717	0.5728	0.5740	0.5751	0.5763	0.5775
75.0	0.5357	0.5367	0.5378	0.5389	0.5400	0.5411	0.5423	0.5435
80.0	0.5053	0.5063	0.5073	0.5084	0.5095	0.5106	0.5117	0.5129
85.0	0.4778	0.4788	0.4798	0.4809	0.4820	0.4830	0.4841	0.4853
90.0	0.4530	0.4539	0.4550	0.4560	0.4570	0.4581	0.4592	0.4602
95.0	0.4304	0.4313	0.4323	0.4333	0.4344	0.4354	0.4365	0.4375
100.0	0.4098	0.4108	0.4117	0.4127	0.4137	0.4147	0.4158	0.4168
105.0	0.3910	0.3919	0.3929	0.3939	0.3949	0.3959	0.3969	0.3979
110.0	0.3738	0.3747	0.3757	0.3766	0.3776	0.3786	0.3796	0.3806
115.0	0.3580	0.3589	0.3599	0.3608	0.3618	0.3627	0.3637	0.3647
120.0	0.3435	0.3444	0.3453	0.3462	0.3472	0.3481	0.3491	0.3501
125.0	0.3301	0.3310	0.3319	0.3328	0.3338	0.3347	0.3357	0.3366
130.0	0.3178	0.3187	0.3196	0.3205	0.3214	0.3224	0.3233	0.3242
135.0	0.3064	0.3073	0.3082	0.3091	0.3100	0.3109	0.3119	0.3128
140.0	0.2959	0.2968	0.2977	0.2986	0.2995	0.3004	0.3013	0.3022
145.0	0.2862	0.2871	0.2880	0.2889	0.2898	0.2907	0.2916	0.2925
150.0	0.2773	0.2781	0.2790	0.2799	0.2808	0.2817	0.2825	0.2834

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 23

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 4.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.3934	1.3951	1.3968	1.3985	1.4003	1.4021	1.4040	1.4059
25.0	1.2457	1.2473	1.2489	1.2506	1.2523	1.2541	1.2559	1.2577
30.0	1.1226	1.1241	1.1257	1.1273	1.1290	1.1307	1.1324	1.1342
35.0	1.0188	1.0202	1.0218	1.0233	1.0249	1.0266	1.0282	1.0299
40.0	0.9304	0.9318	0.9332	0.9347	0.9363	0.9378	0.9394	0.9411
45.0	0.8544	0.8557	0.8571	0.8586	0.8601	0.8616	0.8631	0.8647
50.0	0.7885	0.7898	0.7912	0.7926	0.7940	0.7954	0.7969	0.7984
55.0	0.7310	0.7322	0.7335	0.7349	0.7363	0.7377	0.7391	0.7405
60.0	0.6804	0.6816	0.6829	0.6842	0.6855	0.6868	0.6882	0.6896
65.0	0.6356	0.6368	0.6380	0.6393	0.6406	0.6419	0.6432	0.6445
70.0	0.5958	0.5969	0.5981	0.5994	0.6006	0.6019	0.6031	0.6044
75.0	0.5602	0.5613	0.5625	0.5636	0.5648	0.5661	0.5673	0.5686
80.0	0.5282	0.5293	0.5304	0.5316	0.5327	0.5339	0.5351	0.5364
85.0	0.4993	0.5004	0.5015	0.5026	0.5038	0.5049	0.5061	0.5073
90.0	0.4732	0.4743	0.4753	0.4764	0.4775	0.4787	0.4798	0.4810
95.0	0.4495	0.4505	0.4516	0.4526	0.4537	0.4548	0.4559	0.4571
100.0	0.4279	0.4289	0.4299	0.4310	0.4320	0.4331	0.4342	0.4353
105.0	0.4081	0.4091	0.4101	0.4111	0.4122	0.4132	0.4143	0.4154
110.0	0.3900	0.3910	0.3920	0.3930	0.3940	0.3951	0.3961	0.3972
115.0	0.3734	0.3744	0.3754	0.3764	0.3774	0.3784	0.3794	0.3804
120.0	0.3582	0.3591	0.3601	0.3611	0.3621	0.3631	0.3641	0.3651
125.0	0.3441	0.3451	0.3460	0.3470	0.3480	0.3489	0.3499	0.3509
130.0	0.3312	0.3321	0.3331	0.3340	0.3350	0.3359	0.3369	0.3379
135.0	0.3192	0.3202	0.3211	0.3220	0.3230	0.3239	0.3249	0.3258
140.0	0.3082	0.3091	0.3100	0.3110	0.3119	0.3128	0.3138	0.3147
145.0	0.2980	0.2989	0.2998	0.3007	0.3017	0.3026	0.3035	0.3045
150.0	0.2886	0.2895	0.2904	0.2913	0.2922	0.2931	0.2940	0.2950

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 24

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 5.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.4661	1.4680	1.4701	1.4721	1.4743	1.4764	1.4786	1.4809
25.0	1.3099	1.3118	1.3137	1.3157	1.3177	1.3197	1.3218	1.3239
30.0	1.1799	1.1816	1.1834	1.1853	1.1872	1.1891	1.1911	1.1931
35.0	1.0703	1.0719	1.0736	1.0754	1.0772	1.0791	1.0809	1.0828
40.0	0.9769	0.9785	0.9802	0.9819	0.9836	0.9853	0.9871	0.9889
45.0	0.8968	0.8983	0.8998	0.9014	0.9031	0.9047	0.9064	0.9082
50.0	0.8273	0.8287	0.8302	0.8318	0.8333	0.8349	0.8365	0.8382
55.0	0.7666	0.7680	0.7694	0.7709	0.7724	0.7739	0.7755	0.7771
60.0	0.7133	0.7146	0.7160	0.7174	0.7189	0.7203	0.7218	0.7233
65.0	0.6661	0.6674	0.6687	0.6701	0.6715	0.6729	0.6743	0.6758
70.0	0.6242	0.6254	0.6267	0.6280	0.6293	0.6307	0.6321	0.6335
75.0	0.5867	0.5879	0.5891	0.5904	0.5917	0.5930	0.5943	0.5957
80.0	0.5530	0.5541	0.5553	0.5566	0.5578	0.5591	0.5604	0.5617
85.0	0.5226	0.5237	0.5249	0.5261	0.5273	0.5285	0.5298	0.5311
90.0	0.4951	0.4962	0.4973	0.4985	0.4997	0.5009	0.5021	0.5033
95.0	0.4701	0.4712	0.4723	0.4734	0.4746	0.4758	0.4769	0.4781
100.0	0.4473	0.4484	0.4495	0.4506	0.4517	0.4529	0.4540	0.4552
105.0	0.4266	0.4276	0.4287	0.4298	0.4309	0.4320	0.4331	0.4342
110.0	0.4075	0.4085	0.4096	0.4107	0.4117	0.4128	0.4139	0.4150
115.0	0.3901	0.3911	0.3921	0.3931	0.3942	0.3953	0.3963	0.3974
120.0	0.3740	0.3750	0.3760	0.3770	0.3781	0.3791	0.3802	0.3812
125.0	0.3592	0.3602	0.3612	0.3622	0.3632	0.3643	0.3653	0.3663
130.0	0.3456	0.3466	0.3476	0.3485	0.3495	0.3505	0.3516	0.3526
135.0	0.3330	0.3340	0.3350	0.3359	0.3369	0.3379	0.3389	0.3399
140.0	0.3214	0.3224	0.3233	0.3243	0.3253	0.3262	0.3272	0.3282
145.0	0.3107	0.3116	0.3126	0.3135	0.3145	0.3154	0.3164	0.3174
150.0	0.3008	0.3017	0.3027	0.3036	0.3045	0.3055	0.3064	0.3074

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 25

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 5.5 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.5448	1.5470	1.5493	1.5517	1.5541	1.5565	1.5590	1.5615
25.0	1.3796	1.3816	1.3838	1.3860	1.3882	1.3905	1.3928	1.3952
30.0	1.2420	1.2439	1.2460	1.2480	1.2501	1.2523	1.2545	1.2567
35.0	1.1261	1.1279	1.1298	1.1318	1.1338	1.1358	1.1378	1.1399
40.0	1.0275	1.0292	1.0310	1.0328	1.0347	1.0366	1.0386	1.0406
45.0	0.9427	0.9444	0.9461	0.9479	0.9496	0.9514	0.9533	0.9552
50.0	0.8694	0.8709	0.8726	0.8742	0.8759	0.8776	0.8794	0.8812
55.0	0.8053	0.8068	0.8084	0.8099	0.8116	0.8132	0.8149	0.8166
60.0	0.7490	0.7504	0.7519	0.7535	0.7550	0.7566	0.7582	0.7598
65.0	0.6992	0.7006	0.7020	0.7035	0.7050	0.7065	0.7080	0.7096
70.0	0.6549	0.6563	0.6577	0.6591	0.6605	0.6620	0.6634	0.6650
75.0	0.6154	0.6167	0.6180	0.6194	0.6207	0.6221	0.6236	0.6250
80.0	0.5798	0.5811	0.5824	0.5837	0.5850	0.5864	0.5878	0.5892
85.0	0.5478	0.5490	0.5503	0.5516	0.5528	0.5542	0.5555	0.5568
90.0	0.5188	0.5200	0.5212	0.5225	0.5237	0.5250	0.5263	0.5276
95.0	0.4925	0.4936	0.4948	0.4960	0.4972	0.4985	0.4997	0.5010
100.0	0.4685	0.4696	0.4708	0.4720	0.4731	0.4743	0.4756	0.4768
105.0	0.4466	0.4477	0.4488	0.4500	0.4511	0.4523	0.4535	0.4547
110.0	0.4265	0.4276	0.4287	0.4298	0.4310	0.4321	0.4333	0.4344
115.0	0.4081	0.4092	0.4103	0.4114	0.4125	0.4136	0.4147	0.4159
120.0	0.3912	0.3923	0.3933	0.3944	0.3955	0.3966	0.3977	0.3988
125.0	0.3757	0.3767	0.3777	0.3788	0.3798	0.3809	0.3820	0.3831
130.0	0.3613	0.3623	0.3633	0.3644	0.3654	0.3665	0.3675	0.3686
135.0	0.3481	0.3491	0.3501	0.3511	0.3521	0.3531	0.3542	0.3552
140.0	0.3358	0.3368	0.3378	0.3388	0.3398	0.3408	0.3419	0.3429
145.0	0.3245	0.3255	0.3265	0.3275	0.3285	0.3295	0.3305	0.3315
150.0	0.3141	0.3151	0.3160	0.3170	0.3180	0.3190	0.3199	0.3209

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.

TABLE 26

KINEMATIC VISCOSITY OF SODIUM CHLORIDE SOLUTIONS

CONCENTRATION = 6.0 MOL/KG

PRESSURE, MPA:	p*	5.0	10.0	15.0	20.0	25.0	30.0	35.0
TEMPERATURE, C								
20.0	1.6297	1.6321	1.6346	1.6372	1.6398	1.6425	1.6452	1.6479
25.0	1.4547	1.4570	1.4593	1.4617	1.4641	1.4666	1.4691	1.4717
30.0	1.3091	1.3112	1.3134	1.3156	1.3179	1.3202	1.3226	1.3250
35.0	1.1864	1.1884	1.1905	1.1926	1.1947	1.1969	1.1992	1.2014
40.0	1.0821	1.0840	1.0859	1.0879	1.0900	1.0920	1.0941	1.0963
45.0	0.9925	0.9943	0.9962	0.9980	1.0000	1.0019	1.0039	1.0059
50.0	0.9149	0.9166	0.9184	0.9202	0.9220	0.9239	0.9258	0.9277
55.0	0.8473	0.8489	0.8505	0.8522	0.8540	0.8558	0.8576	0.8594
60.0	0.7878	0.7893	0.7909	0.7926	0.7942	0.7959	0.7976	0.7994
65.0	0.7352	0.7367	0.7382	0.7398	0.7414	0.7430	0.7446	0.7463
70.0	0.6884	0.6899	0.6913	0.6928	0.6944	0.6959	0.6975	0.6991
75.0	0.6466	0.6480	0.6495	0.6509	0.6524	0.6539	0.6554	0.6570
80.0	0.6091	0.6105	0.6119	0.6133	0.6147	0.6161	0.6176	0.6191
85.0	0.5753	0.5766	0.5780	0.5793	0.5807	0.5821	0.5835	0.5849
90.0	0.5447	0.5460	0.5473	0.5486	0.5499	0.5513	0.5527	0.5540
95.0	0.5169	0.5182	0.5194	0.5207	0.5220	0.5233	0.5246	0.5260
100.0	0.4916	0.4928	0.4940	0.4953	0.4966	0.4978	0.4991	0.5004
105.0	0.4685	0.4697	0.4709	0.4721	0.4733	0.4746	0.4758	0.4771
110.0	0.4474	0.4485	0.4497	0.4509	0.4521	0.4533	0.4545	0.4557
115.0	0.4279	0.4291	0.4302	0.4314	0.4325	0.4337	0.4349	0.4361
120.0	0.4101	0.4112	0.4123	0.4135	0.4146	0.4158	0.4169	0.4181
125.0	0.3937	0.3948	0.3959	0.3970	0.3981	0.3992	0.4004	0.4015
130.0	0.3786	0.3796	0.3807	0.3818	0.3829	0.3840	0.3851	0.3862
135.0	0.3646	0.3656	0.3667	0.3678	0.3688	0.3699	0.3710	0.3721
140.0	0.3517	0.3527	0.3538	0.3548	0.3559	0.3569	0.3580	0.3591
145.0	0.3398	0.3408	0.3418	0.3429	0.3439	0.3449	0.3460	0.3470
150.0	0.3288	0.3298	0.3308	0.3318	0.3328	0.3338	0.3349	0.3359

p* IS EQUAL TO 0.1 MPA OR THE VAPOR PRESSURE WHICHEVER IS HIGHER.