

Appendix

Charts

Graphs

Tables



°Baumé/Specific Gravity/Temperature/Concentration Table For Ammonium Hydroxide

°Bé °F/60°F	Sp. Gr. °F/60°F	Percent Ammonia At						
		40°F	50°F	60°F	70°F	80°F	90°F	100°F
12.6	0.9818	4.8	4.6	4.4	4.1	3.8	3.4	2.9
12.8	0.9804	5.1	4.9	4.7	4.4	4.1	3.7	3.2
13.0	0.9790	5.5	5.3	5.0	4.7	4.4	4.0	3.5
13.2	0.9777	5.8	5.6	5.4	5.0	4.7	4.3	3.8
13.4	0.9763	6.2	6.0	5.7	5.4	5.0	4.6	4.1
13.6	0.9749	6.5	6.3	6.0	5.7	5.4	4.9	4.4
13.8	0.9736	6.9	6.7	6.4	6.1	5.7	5.2	4.7
14.0	0.9722	7.3	7.0	6.7	6.4	6.0	5.5	5.0
14.2	0.9709	7.6	7.4	7.0	6.7	6.3	5.8	5.2
14.4	0.9695	8.0	7.8	7.4	7.1	6.7	6.2	5.5
14.6	0.9682	8.4	8.1	7.8	7.4	7.0	6.5	5.8
14.8	0.9669	8.8	8.5	8.1	7.7	7.3	6.8	6.2
15.0	0.9655	9.1	8.8	8.5	8.1	7.6	7.1	6.5
15.2	0.9642	9.5	9.2	8.8	8.4	8.0	7.4	6.8
15.4	0.9629	9.9	9.5	9.2	8.8	8.3	7.7	7.1
15.6	0.9615	10.3	9.9	9.5	9.1	8.6	8.0	7.4
15.8	0.9602	10.7	10.3	9.9	9.5	8.9	8.4	7.7
16.0	0.9589	11.0	10.7	10.3	9.8	9.3	8.7	8.0
16.2	0.9576	11.4	11.0	10.6	10.2	9.6	9.0	8.3
16.4	0.9563	11.8	11.4	11.0	10.5	9.9	9.3	8.7
16.6	0.9550	12.2	11.8	11.4	10.9	10.3	9.7	9.0
16.8	0.9537	12.6	12.2	11.8	11.2	10.7	10.0	9.3
17.0	0.9524	13.0	12.6	12.1	11.6	11.0	10.4	9.6
17.2	0.9511	13.4	13.0	12.5	12.0	11.4	10.7	10.0
17.4	0.9498	13.8	13.4	12.9	12.3	11.7	11.0	10.3
17.6	0.9485	14.2	13.7	13.2	12.7	12.0	11.3	10.6
17.8	0.9472	14.6	14.1	13.6	13.0	12.4	11.7	10.9
18.0	0.9459	15.0	14.5	14.0	13.4	12.7	12.0	11.2
18.2	0.9447	15.3	14.9	14.3	13.7	13.1	12.3	11.5
18.4	0.9434	15.8	15.3	14.7	14.1	13.5	12.7	11.9
18.6	0.9421	16.2	15.6	15.0	14.4	13.8	13.0	12.2
18.8	0.9409	16.6	16.0	15.4	14.8	14.1	13.4	12.5
19.0	0.9396	17.0	16.5	15.9	15.2	14.5	13.8	12.9
19.2	0.9383	17.4	16.8	16.2	15.5	14.9	14.1	13.2
19.4	0.9371	17.8	17.2	16.6	15.9	15.2	14.4	13.6
19.6	0.9358	18.2	17.6	17.0	16.3	15.6	14.8	13.9
19.8	0.9346	18.6	18.0	17.4	16.7	16.0	15.1	14.2

°Baumé/Specific Gravity/Temperature/Concentration Table For Ammonium Hydroxide, con't.

°Bé	Sp. Gr	Percent Ammonia At						
		°F/60°F	40°F	50°F	60°F	70°F	80°F	90°F
20.0	0.9333	19.1	18.5	17.8	17.1	16.3	15.5	14.6
20.2	0.9321	19.4	18.8	18.1	17.4	16.7	15.8	14.9
20.4	0.9309	19.9	19.2	18.5	17.8	17.1	16.2	15.3
20.6	0.9296	20.4	19.6	18.9	18.2	17.4	16.5	15.6
20.8	0.9284	20.7	20.0	19.3	18.6	17.8	16.9	16.0
21.0	0.9272	21.1	20.4	19.7	19.0	18.1	17.2	16.3
21.2	0.9259	21.5	20.8	20.1	19.3	18.5	17.5	16.7
21.4	0.9247	21.8	21.2	20.5	19.7	18.9	17.9	17.0
21.6	0.9235	22.3	21.6	20.8	20.0	19.2	18.2	17.3
21.8	0.9223	22.7	22.0	21.3	20.4	19.6	18.6	17.7
22.0	0.9211	23.1	22.4	21.6	20.8	19.9	18.9	18.0
22.2	0.9198	23.5	22.8	22.0	21.1	20.3	19.2	18.3
22.4	0.9186	23.9	23.2	22.4	21.5	20.6	19.6	18.7
22.6	0.9174	24.4	23.6	22.7	21.9	21.0	19.9	19.0
22.8	0.9162	24.8	24.0	23.1	22.3	21.3	20.3	19.3
23.0	0.9150	25.2	24.4	23.5	22.7	21.7	20.6	19.7
23.2	0.9138	25.6	24.9	23.9	23.0	22.0	20.9	20.0
23.4	0.9126	26.0	25.2	24.3	23.4	22.4	21.3	20.4
23.6	0.9111	26.4	25.6	24.7	23.8	22.8	21.6	20.7
23.8	0.9103	26.8	26.0	25.1	24.2	23.2	22.0	21.0
24.0	0.9091	27.3	26.4	25.5	24.5	23.5	22.3	21.3
24.2	0.9079	27.7	26.8	25.8	24.9	23.8	22.6	21.7
24.4	0.9067	28.2	27.2	26.2	25.3	24.2	23.0	22.0
24.6	0.9056	28.5	27.6	26.6	25.6	24.6	23.3	22.3
24.8	0.9044	28.9	28.0	27.0	26.0	24.9	23.6	22.6
25.0	0.9032	29.4	28.5	27.4	26.4	25.3	24.0	23.0
25.2	0.9021	29.8	28.9	27.8	26.7	25.6	24.3	23.3
25.4	0.9009	30.2	29.3	28.2	27.1	26.0	24.6	23.7
25.6	0.8997	30.6	29.6	28.6	27.5	26.4	24.9	24.0
25.8	0.8986	31.0	30.1	29.0	27.9	26.8	25.3	24.4
26.0	0.8974	31.5	30.5	29.4	28.3	27.1	25.7	
26.2	0.8963	31.9	30.9	29.8	28.7	27.5	26.0	
26.4	0.8951	32.4	31.3	30.2	29.0	27.9	26.4	
26.6	0.8940	32.7	31.7	30.5	29.4	28.2	26.7	
26.8	0.8929	33.2	32.1	30.9	29.7	28.6		
27.0	0.8917	33.6	32.5	31.3	30.1	28.9		
27.2	0.8906	34.0	32.9	31.7	30.5	29.3		
27.4	0.8895		33.3	32.1	30.8			
27.6	0.8883		33.7	32.5	31.2			
27.8	0.8872		34.1	32.9	31.6			
28.0	0.8861			33.3	32.0			

°Baumé/Specific Gravity/Temperature/Concentration Table For Ammonium Hydroxide

°Bé °F/60°F	Sp. Gr. °F/60°F	Percent Ammonia At						
		40°F	50°F	60°F	70°F	80°F	90°F	100°F
12.6	0.9818	4.8	4.6	4.4	4.1	3.8	3.4	2.9
12.8	0.9804	5.1	4.9	4.7	4.4	4.1	3.7	3.2
13.0	0.9790	5.5	5.3	5.0	4.7	4.4	4.0	3.5
13.2	0.9777	5.8	5.6	5.4	5.0	4.7	4.3	3.8
13.4	0.9763	6.2	6.0	5.7	5.4	5.0	4.6	4.1
13.6	0.9749	6.5	6.3	6.0	5.7	5.4	4.9	4.4
13.8	0.9736	6.9	6.7	6.4	6.1	5.7	5.2	4.7
14.0	0.9722	7.3	7.0	6.7	6.4	6.0	5.5	5.0
14.2	0.9709	7.6	7.4	7.0	6.7	6.3	5.8	5.2
14.4	0.9695	8.0	7.8	7.4	7.1	6.7	6.2	5.5
14.6	0.9682	8.4	8.1	7.8	7.4	7.0	6.5	5.8
14.8	0.9669	8.8	8.5	8.1	7.7	7.3	6.8	6.2
15.0	0.9655	9.1	8.8	8.5	8.1	7.6	7.1	6.5
15.2	0.9642	9.5	9.2	8.8	8.4	8.0	7.4	6.8
15.4	0.9629	9.9	9.5	9.2	8.8	8.3	7.7	7.1
15.6	0.9615	10.3	9.9	9.5	9.1	8.6	8.0	7.4
15.8	0.9602	10.7	10.3	9.9	9.5	8.9	8.4	7.7
16.0	0.9589	11.0	10.7	10.3	9.8	9.3	8.7	8.0
16.2	0.9576	11.4	11.0	10.6	10.2	9.6	9.0	8.3
16.4	0.9563	11.8	11.4	11.0	10.5	9.9	9.3	8.7
16.6	0.9550	12.2	11.8	11.4	10.9	10.3	9.7	9.0
16.8	0.9537	12.6	12.2	11.8	11.2	10.7	10.0	9.3
17.0	0.9524	13.0	12.6	12.1	11.6	11.0	10.4	9.6
17.2	0.9511	13.4	13.0	12.5	12.0	11.4	10.7	10.0
17.4	0.9498	13.8	13.4	12.9	12.3	11.7	11.0	10.3
17.6	0.9485	14.2	13.7	13.2	12.7	12.0	11.3	10.6
17.8	0.9472	14.6	14.1	13.6	13.0	12.4	11.7	10.9
18.0	0.9459	15.0	14.5	14.0	13.4	12.7	12.0	11.2
18.2	0.9447	15.3	14.9	14.3	13.7	13.1	12.3	11.5
18.4	0.9434	15.8	15.3	14.7	14.1	13.5	12.7	11.9
18.6	0.9421	16.2	15.6	15.0	14.4	13.8	13.0	12.2
18.8	0.9409	16.6	16.0	15.4	14.8	14.1	13.4	12.5
19.0	0.9396	17.0	16.5	15.9	15.2	14.5	13.8	12.9
19.2	0.9383	17.4	16.8	16.2	15.5	14.9	14.1	13.2
19.4	0.9371	17.8	17.2	16.6	15.9	15.2	14.4	13.6
19.6	0.9358	18.2	17.6	17.0	16.3	15.6	14.8	13.9
19.8	0.9346	18.6	18.0	17.4	16.7	16.0	15.1	14.2

Table of Corrections To Aqua Ammonia Specific Gravity Readings To Compensate For Sampling Temperature Variations

Correction To Specific Gravity Reading For Each Fahrenheit Degree Variation From The 60°F Standard

Observed Specific Gravity	Observed Temperature						
	40°F	50°F	60°F	70°F	80°F	90°F	100°F
0.9524	-0.00016	-0.00017	0.00000	+0.00018	+0.00019	+0.00021	+0.00022
0.9459	-0.00017	-0.00019	0.00000	+0.00020	+0.00021	+0.00022	+0.00024
0.9396	-0.00019	-0.00020	0.00000	+0.00021	+0.00022	+0.00023	+0.00025
0.9333	-0.00021	-0.00022	0.00000	+0.00023	+0.00024	+0.00025	+0.00026
0.9272	-0.00022	-0.00024	0.00000	+0.00025	+0.00026	+0.00026	+0.00028
0.9211	-0.00024	-0.00025	0.00000	+0.00027	+0.00027	+0.00029	+0.00029
0.9150	-0.00025	-0.00027	0.00000	+0.00028	+0.00029	+0.00030	-----
0.9091	-0.00027	-0.00029	0.00000	+0.00029	+0.00031	+0.00032	-----
0.9032	-0.00029	-0.00031	0.00000	+0.00031	+0.00032	-----	-----
0.8974	-0.00030	-0.00033	0.00000	+0.00033	+0.00034	-----	-----

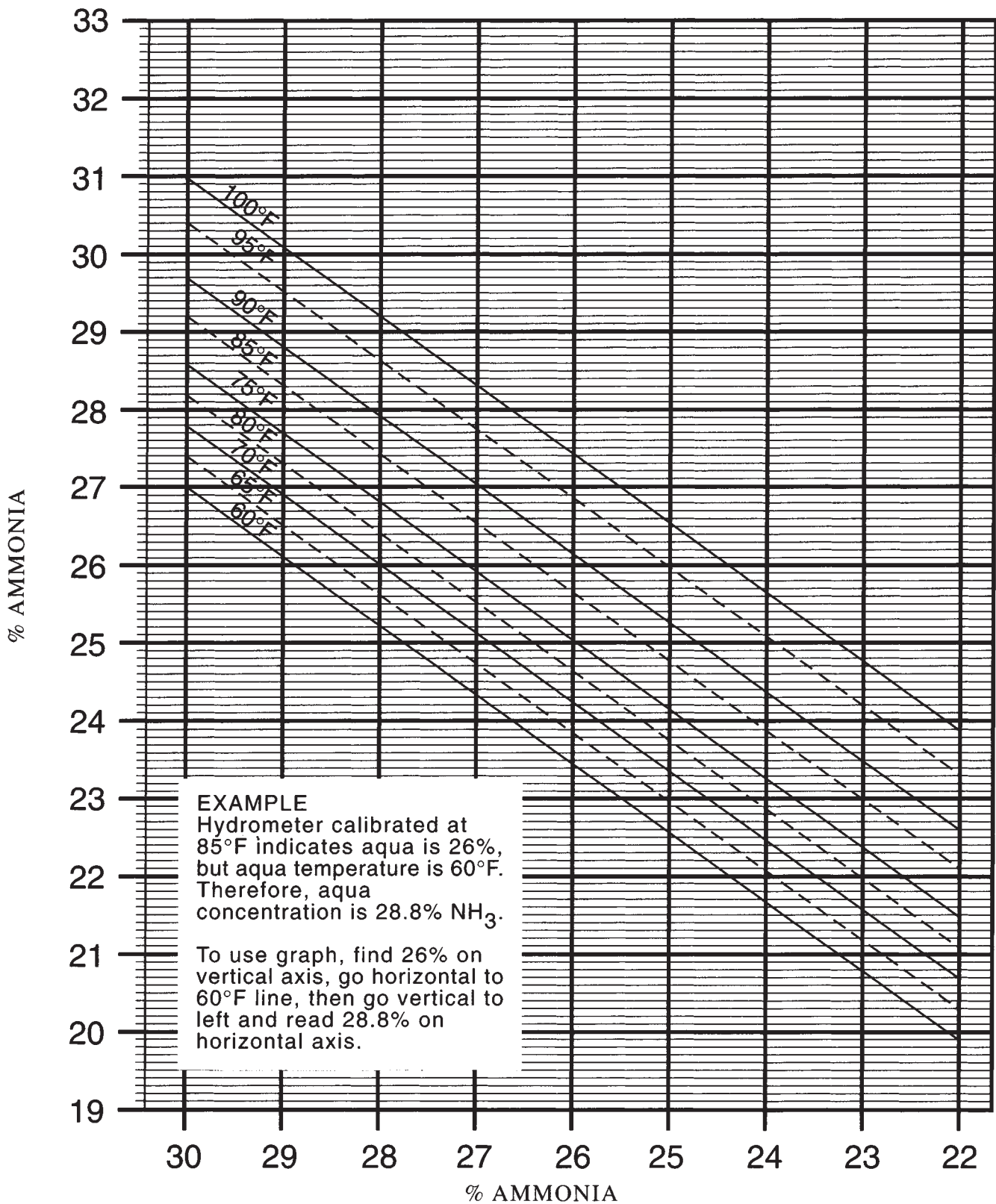
Calculating Specific Gravity Adjusted To 60°F Standard Temperature:

It is satisfactory for most situations simply to find the values for specific gravity and temperature on the chart which are closest to the observed values and use the indicated correction factor.

Example: Find the specific gravity adjusted to 60°F for an observed 0.9163 specific gravity measured at 78°F. The closest specific gravity in the table is 0.9150. Round off 78°F to 80°F. The correction value found in the table at the intersection of 0.9150 specific gravity and 80°F is +0.00029 per Fahrenheit degree. The difference between the observed temperature and the standard 60°F is 18 F°. The adjusted specific gravity reading is $0.9163 + (+0.00029)(18) = 0.9163 + 0.0052 = 0.9215$. Properly stated, the specific gravity adjusted to 60°F is 0.9215.

It is possible to apply a mathematical estimating tool called interpolation to increase the accuracy in the determination of the correction factor. However, the difference in the final calculated adjusted specific gravity is usually negligible. For instance, in the above example, interpolation results in a correction factor of +0.000284 and an end result of 0.9214 specific gravity.

AQUA AMMONIA CONCENTRATION CONVERSIONS



ABSOLUTE PRESSURE OF AMMONIA-WATER SOLUTIONS

Pressures at Temperatures Shown, psia

Ammonia Concentration														
%	32°F	40°F	50°F	60°F	70°F	80°F	90°F	100°F	110°F	120°F	130°F	140°F		
2	0.2	0.3	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.8	4.5	7.3		
4	0.3	0.4	0.5	0.7	1.0	1.3	1.8	2.4	3.1	3.9	6.1	9.3		
6	0.4	0.6	0.7	0.9	1.2	1.8	2.3	3.0	3.8	4.8	7.6	11.2		
8	0.6	0.7	0.8	1.2	1.5	2.2	2.8	3.6	4.5	5.8	8.9	13.2		
10	0.7	0.8	1.1	1.5	1.9	2.5	3.3	4.2	5.3	6.8	10.3	15.5		
12	0.8	1.0	1.2	1.7	2.3	3.1	4.0	5.1	6.4	7.9	12.1	18.1		
14	1.0	1.2	1.6	2.2	2.8	3.7	4.8	6.1	7.6	9.4	14.1	21.2		
16	1.2	1.5	1.9	2.7	3.5	4.4	5.6	7.2	9.0	11.1	16.8	24.5		
18	1.4	1.8	2.3	3.2	4.2	5.3	6.7	8.5	10.6	13.2	19.7	28.5		
20	1.8	2.2	2.9	3.8	5.0	6.4	8.1	10.1	12.5	15.6	23.1			
22	2.2	2.7	3.6	4.6	6.0	7.7	9.6	12.1	14.9	18.3	27.4			
24	2.6	3.3	4.3	5.6	7.1	9.1	11.4	14.2	17.6	21.5	31.5			
26	3.2	4.0	5.2	6.7	8.7	10.8	13.8	17.0	20.8	25.6				
27.4	3.7	4.6	5.9	7.8	9.8	12.2	15.5	19.2	23.5	28.8				
28	3.9	4.8	6.3	8.1	10.3	12.8	16.2	20.2	24.7	30.1				
29.4	4.4	5.5	7.2	9.1	11.7	14.6	18.2	22.8	27.8					
30	4.7	5.8	7.7	9.7	12.3	15.3	19.1	24.0	29.3					
32	5.7	7.0	9.1	11.6	14.6	18.1	22.4	28.1						
34	6.8	8.3	10.7	13.6	17.0	21.3	26.3							
36	8.1	9.8	12.7	15.8	19.7	24.9	30.2							
38	9.5	11.5	14.8	18.6	22.9	28.6								
40	11.0	13.3	17.2	21.6	27.1	32.3								
42	12.7	15.4	19.6	24.7	31.2									
44	14.6	17.7	22.1	27.7										
46	16.7	20.2	24.8	30.8										
48	18.8	22.8	28.1											
50	21.0	25.3												

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Partial Vapor Pressure Of Ammonia Over Aqua Ammonia (Pressure indicated in psi)

Temp.°F	4.74	9.5	14.29	19.1	23.94	28.81	33.71	38.64	43.59	48.57	53.58	58.62	63.69	68.79	73.91	79.07	84.26	89.47	94.72
32	0.3	0.5	0.9	1.5	2.7	4.3	6.5	8.9	14.1	19.4	25.1	31.1	36.7	42.7	45.9	49.3	52.1	54.9	58.0
40	0.3	0.7	1.1	1.9	3.2	5.1	8.0	12.0	17.1	23.3	30.2	37.2	43.7	49.6	54.4	58.3	61.6	64.8	68.3
50	0.5	0.9	1.5	2.5	4.2	6.6	10.2	15.2	21.6	29.2	37.5	45.9	53.8	60.8	66.6	71.3	75.2	79.1	83.4
50	0.6	1.2	2.0	3.2	5.4	8.5	13.1	19.2	26.9	36.1	46.1	56.2	65.8	74.0	80.9	86.4	91.0	95.7	100.7
70	0.8	1.5	2.6	4.3	6.9	10.8	16.3	23.8	33.2	44.3	56.3	58.3	79.4	89.3	97.4	104.0	109.6	114.8	120.6
50	1.0	2.0	3.3	6.5	8.7	13.5	20.3	29.4	40.7	53.8	68.0	82.4	95.5	107.1	116.4	124.2	130.6	136.4	143.7
90	1.4	2.5	4.3	6.9	10.9	16.8	25.0	35.9	49.5	65.0	81.6	98.4	113.8	127.2	138.2	147.0	154.5	161.7	169.7
100	1.7	3.2	5.3	8.6	13.5	20.7	30.6	43.6	59.5	77.9	97.3	116.8	134.7	150.2	162.9	173.2	182.0	190.1	199.2
110	2.1	4.0	6.7	10.6	16.7	25.2	37.0	52.4	71.2	92.6	115.2	137.6	158.4	176.2	190.9	203.0	212.7	222.2	232.8
120	2.7	5.0	8.2	13.1	20.3	30.5	44.6	62.6	84.4	109.4	135.5	161.4	185.1	206.8	222.3	236.1	247.1	258.2	270.0
130	3.3	6.1	10.1	15.9	24.6	36.7	53.2	74.3	99.7	128.5	158.5	188.2	215.1	238.7	257.9	272.9	286.1	298.5	311.8
140	4.0	7.4	12.2	19.2	29.4	43.8	63.0	87.6	116.7	149.9	184.2	218.2	248.7	275.3	297.1	314.6	329.0	342.9	358.5
150	4.8	8.9	14.7	23.1	35.1	51.9	74.3	102.5	136.2	173.6	212.9	261.2	286.0	316.2	340.8	360.4	376.6	392.6	409.6
160	5.7	10.7	17.6	27.5	41.6	61.0	86.9	119.4	157.7	200.5	246.0	288.4	327.8	361.6	389.1	411.3	429.7	447.4	466.4
170	6.8	12.7	20.9	32.4	48.9	71.5	101.1	138.3	182.0	230.4	280.5	329.4	373.6	411.6	442.3	466.7	487.9	507.6	528.5
180	7.9	15.0	24.6	36.1	57.2	83.1	117.0	159.4	208.7	263.4	319.9	374.3	424.1	466.3	500.6	528.1	551.2		
150	9.2	17.6	28.8	44.5	66.5	96.2	134.9	182.7	238.4	299.9	363.1	424.2	479.4	526.2					
200	10.7	20.5	33.5	51.6	76.9	110.9	154.6	208.5	270.9	340.0	410.2	478.6	\$39.8						
210	12.3	23.7	38.8	59.7	88.5	126.8	176.2	237.0	307.1	384.0	462.4	537.8							
220	14.0	27.2	44.6	68.4	101.2	144.7	200.5	268.3	346.1	431.4	518.2								
230	16.0	31.1	51.1	78.1	116.5	164.2	226.7	302.5	389.3	483.5									
240	17.9	35.4	58.0	89.0	130.9	185.8	255.3	339.7	435.8	540.4									
250	20.1	40.1	65.7	100.7	147.7	209.4	286.9	380.4	486.7										

Adapted from Wilson, University of Illinois, Eng. Expt. Sta. Bull. 146

Partial Vapor Pressure Of Ammonia Over Aqua Ammonia (Pressure indicated in psi)

Temp. °F	Weight % Concentration Of Ammonia In Aqua Ammonia																		
	4.74	9.50	14.29	19.10	23.94	28.81	33.71	38.64	43.59	48.57	53.58	58.62	63.69	68.79	73.91	79.07	84.26	89.47	94.72
32	0.08	0.08	0.07	0.07	0.06	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.03	0.02	0.02	0.02	0.01	0.01	0.00
40	0.12	0.11	0.10	0.10	0.09	0.08	0.08	0.07	0.06	0.06	0.05	0.05	0.04	0.04	0.03	0.02	0.02	0.01	0.01
50	0.17	0.16	0.15	0.14	0.13	0.12	0.11	0.10	0.09	0.08	0.08	0.07	0.06	0.05	0.04	0.03	0.02	0.02	0.01
60	0.24	0.23	0.21	0.20	0.19	0.17	0.16	0.15	0.13	0.12	0.11	0.10	0.08	0.07	0.06	0.05	0.04	0.02	0.01
70	0.34	0.32	0.30	0.28	0.26	0.25	0.23	0.21	0.19	0.17	0.15	0.14	0.12	0.10	0.09	0.07	0.05	0.03	0.02
50	0.48	0.45	0.42	0.40	0.37	0.34	0.32	0.29	0.27	0.24	0.22	0.19	0.17	0.14	0.12	0.10	0.07	0.05	0.02
90	0.66	0.63	0.58	0.55	0.51	0.47	0.44	0.40	0.37	0.33	0.30	0.26	0.23	0.20	0.16	0.13	0.10	0.07	0.03
100	0.90	0.85	0.79	0.74	0.69	0.64	0.59	0.55	0.50	0.45	0.41	0.36	0.31	0.27	0.22	0.18	0.13	0.09	0.04
110	1.20	1.14	1.07	1.00	0.93	0.86	0.80	0.73	0.67	0.60	0.54	0.48	0.42	0.36	0.30	0.24	0.18	0.12	0.06
120	1.60	1.51	1.42	1.33	1.24	1.15	1.06	0.97	0.89	0.80	0.72	0.64	0.56	0.48	0.40	0.32	0.24	0.16	0.08
130	2.10	1.98	1.86	1.74	1.62	1.51	1.39	1.28	1.17	1.05	0.95	0.84	0.74	0.63	0.53	0.42	0.32	0.21	0.10
140	2.73	2.57	2.42	2.26	2.11	1.96	1.81	1.66	1.52	1.37	1.23	1.10	0.96	0.82	0.69	0.55	0.41	0.27	0.14
150	3.51	3.31	3.11	2.91	2.72	2.52	2.33	2.14	1.95	1.76	1.59	1.41	1.24	1.06	0.88	0.71	0.53	0.35	0.18
150	4.48	4.22	3.97	3.71	3.46	3.22	2.97	2.73	2.49	2.25	2.02	1.80	1.58	1.35	1.12	0.90	0.67	0.45	0.22
170	5.66	5.34	5.02	4.70	4.38	4.07	3.75	3.45	3.15	2.84	2.56	2.28	1.99	1.71	1.42	1.13	0.85	0.58	0.30
150	7.10	6.69	6.30	5.89	5.49	5.10	4.71	4.33	3.94,	3.57	3.21	2.85	2.50	2.14	1.77	1.42	1.06		
190	8.83	8.32	7.82	7.32	6.83	6.34	5.86	5.38	4.91	4.44	3.99	3.55	3.10	2.65					
200	10.90	10.27	9.65	9.04	8.43	7.83	7.23	6.64	6.06	5.48	4.93	4.38	3.81						
210	13.35	12.58	11.82	11.07	10.32	9.59	8.86	8.13	7.42	6.71	6.04	5.34							
220	16.25	15.32	14.39	13.48	12.57	11.67	10.78	9.90	9.03	8.17	7.31								
230	19.64	18.51	17.40	16.29	15.19	14.11	13.03	11.97	10.91	9.87									
240	23.60	22.25	20.91	19.53	18.26	16.95	15.66	14.38	13.12	11.86									
250	28.20	26.58	25.00	23.39	21.82	20.25	18.71	17.18	15.67										

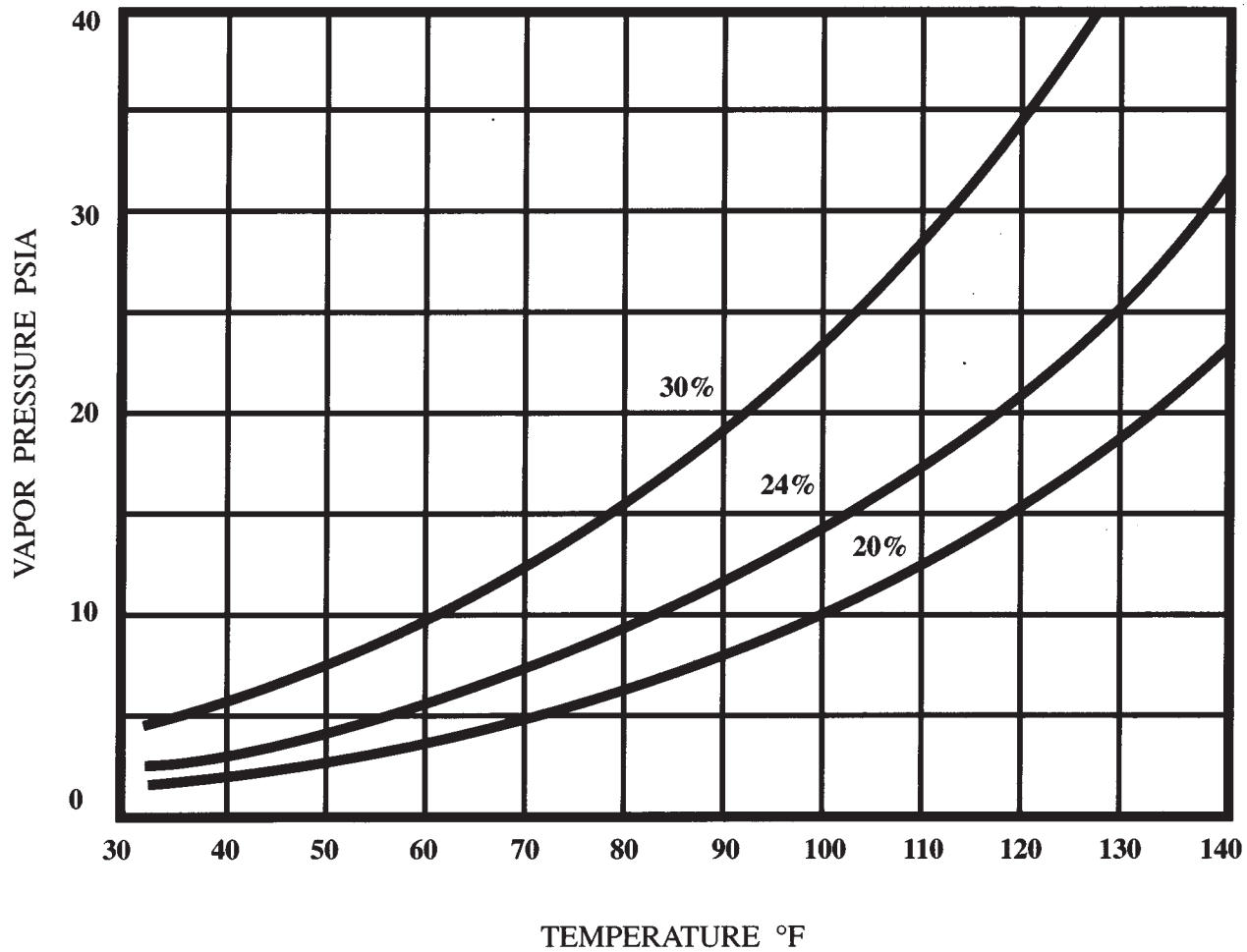
Adapted from Wilson, University of Illinois, Eng. Expt. Sta. Bull. 146

Total Vapor Pressure (Ammonia + Water) Over Aqua Ammonia (Pressure indicated in psi)

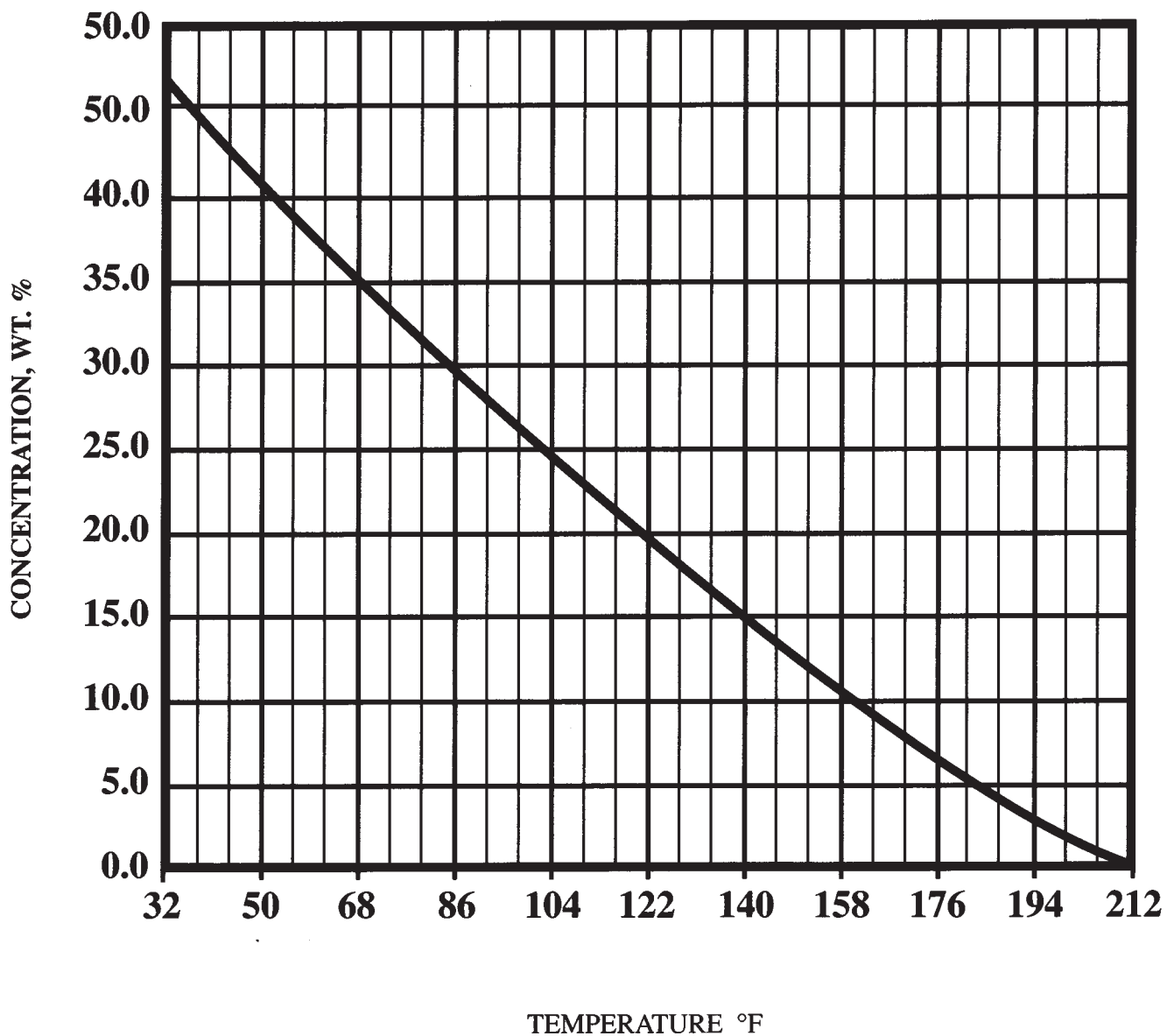
Temp. °F	Weight % Concentration Of Ammonia In Aqua Ammonia																		
	4.74	9.50	14.29	19.10	23.94	28.81	33.71	38.64	43.59	48.57	53.58	58.62	63.69	68.79	73.91	79.07	84.26	89.47	94.72
32	0.3	0.6	1.0	1.6	2.6	4.2	6.5	9.9	14.2	19.4	25.2	31.2	36.8	42.7	45.9	49.3	52.1	54.9	58.0
40	0.4	0.8	1.2	2.0	3.2	5.2	8.1	12.0	17.2	23.4	30.2	37.2	43.7	49.6	54.4	58.3	61.6	64.8	68.3
50	0.6	1.0	1.6	2.7	4.3	6.8	10.4	15.3	21.6	29.3	37.5	45.9	53.8	60.9	66.7	71.3	75.2	79.1	83.4
60	0.9	1.4	2.2	3.5	5.6	8.6	13.2	19.3	27.0	36.3	46.2	56.3	65.9	74.1	81.0	86.5	91.1	95.7	100.7
70	1.2	1.8	2.9	4.6	7.1	11.0	16.6	24.0	33.4	44.4	56.4	68.5	79.5	89.4	97.5	104.1	109.6	114.9	120.6
50	1.5	2.4	3.8	5.8	9.1	13.9	20.6	29.7	41.0	54.1	66.2	82.6	95.7	107.2	116.5	124.3	130.6	136.4	143.7
90	2.0	3.2	4.8	7.4	11.4	17.2	25.5	36.3	49.8	65.3	81.9	98.6	114.0	127.4	138.3	147.2	154.6	161.8	169.8
100	2.6	4.0	6.1	9.3	14.2	21.3	31.2	44.1	60.0	78.3	97.7	117.2	135.0	150.5	163.2	173.4	182.1	190.2	199.2
110	3.3	5.1	7.7	11.6	17.6	26.1	37.8	53.2	71.9	93.2	115.7	138.1	158.8	176.5	191.2	203.3	212.9	222.3	232.8
120	4.3	6.5	9.6	14.4	21.5	31.7	45.6	63.6	85.3	110.2	136.2	162.1	185.7	206.3	222.7	236.4	247.4	258.4	270.1
130	5.4	8.1	11.9	17.7	26.2	38.2	54.6	75.6	100.9	129.6	159.0	189.0	215.9	239.3	258.4	273.3	286.4	298.7	311.9
140	6.7	10.0	14.6	21.5	31.5	45.7	64.8	89.2	118.2	151.3	185.4	219.3	249.7	276.2	297.8	315.0	329.4	343.2	358.5
150	8.3	12.2	17.8	26.0	37.8	54.4	76.6	104.6	138.1	175.4	214.5	252.6	287.2	317.3	341.7	361.1	377.1	392.8	409.8
150	10.2	14.9	21.5	31.2	45.0	64.2	89.9	122.1	160.2	202.7	247.0	290.2	329.4	363.1	390.2	412.2	430.4	447.8	466.6
170	12.4	18.0	25.9	37.1	53.3	75.6	104.8	141.8	185.1	233.2	283.1	331.7	375.6	413.3	443.7	467.8	488.7	508.2	528.8
150	15.0	21.6	30.9	44.0	62.7	88.2	121.7	163.7	212.6	267.0	323.1	377.1	426.6	468.4	502.4	529.5	552.8	578.1	604.1
190	18.1	25.9	36.6	51.8	73.3	102.6	140.8	188.1	243.3	304.3	367.1	427.7	482.5	532.8	578.1	624.1	669.8	715.1	760.1
200	21.6	30.7	43.1	60.6	85.3	118.7	161.8	215.2	277.0	345.5	415.1	483.0	543.6	600.1	652.1	700.1	747.1	793.1	838.1
210	25.6	36.3	50.6	70.7	98.8	136.4	185.1	245.1	314.5	390.7	468.4	542.9	614.1	682.1	746.1	806.1	863.1	918.1	971.1
220	30.3	42.5	59.0	81.9	113.8	156.4	211.2	278.2	355.1	439.6	525.5	614.1	705.1	798.1	892.1	987.1	1083.1	1180.1	1278.1
230	35.6	49.6	68.5	94.4	130.6	178.3	239.7	314.5	400.2	493.4	592.1	693.1	797.1	903.1	1011.1	1121.1	1232.1	1344.1	1457.1
240	41.5	57.6	78.9	108.6	149.2	202.7	270.9	354.1	448.9	562.3	663.1	769.1	877.1	987.1	1099.1	1213.1	1328.1	1444.1	1561.1
250	48.3	66.7	90.7	124.1	169.5	229.6	305.6	397.6	502.4	614.1	732.1	856.1	986.1	1122.1	1264.1	1412.1	1566.1	1726.1	1892.1

Adapted from Wilson, University of Illinois, Eng. Expt. Sta. Bull. 146

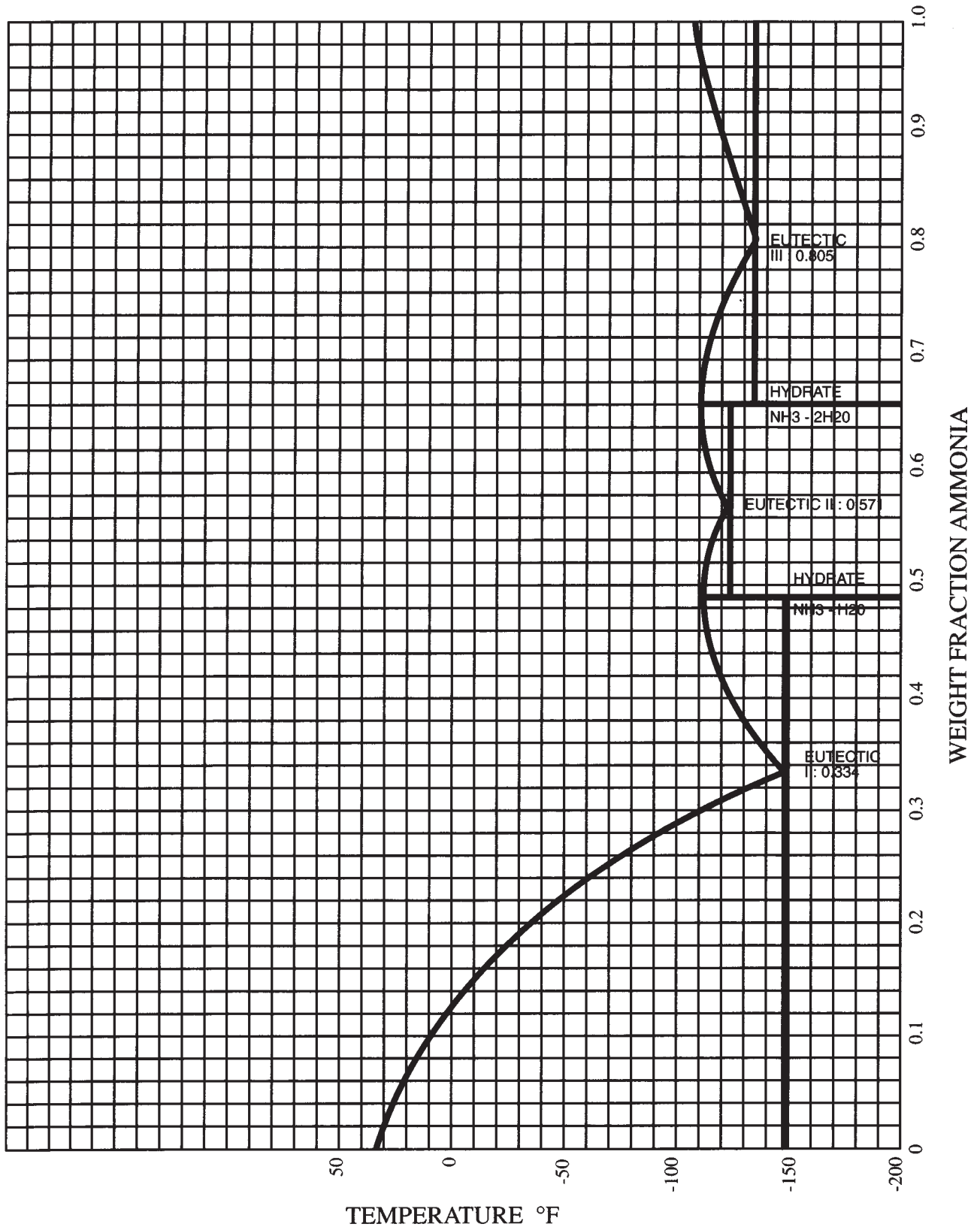
TOTAL VAPOR PRESSURE OF AMMONIA-WATER SOLUTIONS



AMMONIA/WATER SOLUBILITY AT 1 ATMOSPHERE



FREEZING POINT OF AQUA AMMONIA



S. Postma, Recveil des Travaux Chimigues des Pays-Bas 39, 515 (1920)

BOILING POINT OF AMMONIA SOLUTIONS

