

Relative Humidity, Percentage vs. Temperature (Degree Fahrenheit)
Pressure equals 101.313 kPa

HYGROMETERS AND PSYCHROMETERS

These instruments consist of two liquid-in-glass thermometers; the dry bulb which measures the actual air temperature, and the wet bulb which measures the water vapor in the air. The wicking attached to the wet bulb thermometer must be immersed in clean water so that the bulb is completely saturated. Care must be taken that the wick does not become dirty or it will not absorb water, and give inaccurate readings.

The difference between the dry bulb and the wet bulb readings is known as the depression. The depression is indicated on the chart in the horizontal column at the top, and the air or dry bulb temperature is indicated at the left side vertical column. To determine percent of relative humidity, first determine the dry bulb temperature and then the depression. The intersection of both columns is the percent of relative humidity. For example, if the dry bulb reading is 100 °F, and the wet bulb reading is 90 °F, which is a depression of 10°, the relative humidity is 68%, as indicated on the chart.

Where sling psychrometers are used, it is necessary to whirl the instrument for about ten seconds, two or three times, until there is no further drop in temperature, before readings are taken.

Air Temp		Depression of wet-bulb thermometer (t - t')																				
t	emp	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5
20	93	86	79	72	65	58	51	44	38	31	24	18	11	4								
21	93	86	80	73	66	59	53	46	40	33	27	20	14	7	1							
22	93	87	80	74	67	61	54	48	41	35	29	23	16	10	4							
23	94	87	81	74	68	62	56	49	43	37	31	25	19	13	7	1						
24	94	87	81	75	69	63	57	51	45	39	33	27	21	16	10	4	4					
25	94	88	82	76	70	64	58	52	46	41	35	29	24	18	12	7	7					
26	94	88	82	77	71	65	59	54	48	42	37	31	26	20	15	10	10					
27	94	89	83	77	72	66	60	55	49	44	39	33	28	23	17	12	12	2				
28	94	89	83	78	72	67	62	56	51	46	40	35	30	25	20	15	15	5	0			
29	95	89	84	78	73	68	63	57	52	47	42	37	32	27	22	17	17	7	2			
30	95	89	84	79	74	69	64	59	54	49	44	39	34	29	24	19	19	10	5	0		
31	95	90	85	80	74	70	65	60	55	50	45	40	36	31	26	21	21	12	8	3		
32	95	90	85	80	75	70	65	61	56	51	47	42	37	33	28	24	24	15	10	6	1	
33	95	90	85	81	76	71	66	62	57	52	48	43	39	34	30	26	26	17	12	8	4	
34	95	90	86	81	76	72	67	63	58	54	49	45	40	36	32	27	27	19	15	11	6	
35	95	91	86	82	77	72	68	64	59	55	50	46	42	38	33	29	29	21	17	13	9	
36	95	91	86	82	78	73	69	64	60	56	52	48	43	39	35	31	31	23	19	15	11	
37	96	91	87	82	78	74	70	66	61	57	53	49	45	41	37	33	33	25	21	17	13	
38	96	91	87	83	79	74	70	66	62	58	54	50	46	42	38	34	34	27	23	19	15	
39	96	92	87	83	79	75	71	67	63	59	55	51	47	43	40	36	36	28	25	21	17	
40	96	92	88	84	80	76	72	68	64	60	56	52	49	45	41	37	37	30	26	23	19	
41	96	92	88	84	80	76	72	68	65	61	57	53	50	46	42	39	39	32	28	25	21	
42	96	92	88	84	80	77	73	69	65	62	58	54	51	47	44	40	40	33	30	26	23	
43	96	92	88	85	81	77	73	70	66	63	59	55	52	48	45	42	42	35	31	28	25	
44	96	92	89	85	81	78	74	70	67	63	60	56	53	50	46	43	43	36	33	30	26	
45	96	93	89	85	82	78	75	71	68	64	61	57	54	51	47	44	44	38	34	31	28	
46	96	93	89	86	82	79	75	72	68	65	62	58	55	52	48	45	45	39	36	33	30	
47	96	93	89	86	82	79	76	72	69	66	62	59	56	53	49	46	46	40	37	34	31	
48	96	93	90	86	83	79	76	73	70	66	63	60	57	54	51	47	47	41	38	35	32	
49	97	93	90	86	83	80	77	73	70	67	64	61	58	55	51	48	48	43	40	37	34	
50	97	93	90	87	83	80	77	74	71	68	65	62	59	56	52	49	49	44	41	38	35	
51	97	93	90	87	84	81	77	74	71	68	65	62	59	56	53	50	50	45	42	39	36	
52	97	94	90	87	84	81	78	75	72	69	66	63	60	57	54	51	51	46	43	40	38	
53	97	94	91	87	84	81	78	75	72	69	66	63	60	57	54	51	52	47	44	41	39	
54	97	94	91	88	85	82	79	76	73	70	67	64	61	58	55	52	53	48	45	42	40	
55	97	94	91	88	85	82	79	76	73	70	68	65	62	59	57	54	54	49	46	44	41	
56	97	94	91	88	85	82	79	77	74	71	68	65	63	60	57	55	55	50	47	45	42	
57	97	94	91	88	85	83	80	77	74	71	69	66	63	61	58	56	56	51	48	46	43	
58	97	94	91	88	86	83	80	77	75	72	69	67	64	61	59	56	56	51	49	46	44	
59	97	94	91	89	86	83	80	78	75	72	70	67	65	62	60	57	57	52	50	47	45	
60	97	94	92	89	86	83	81	78	75	73	70	68	65	63	60	58	58	53	51	48	46	
61	97	94	92	89	86	84	81	78	76	73	71	68	66	63	61	58	58	54	51	49	47	
62	97	95	92	89	87	84	81	79	76	74	71	69	66	64	62	59	59	54	52	50	48	
63	97	95	92	89	87	84	82	79	77	74	72	69	67	64	62	60	60	55	53	51	48	
64	97	95	92	89	87	84	82	79	77	75	72	70	67	65	63	60	60	56	54	51	49	
65	97	95	92	90	87	85	82	80	77	75	73	70	68	66	63	61	61	57	54	52	50	
66	97	95	92	90	87	85	83	80	78	75	73	71	68	66	64	62	62	57	55	53	51	
67	97	95	92	90	87	85	83	80	78	76	73	71	69	67	64	62	62	58	56	54	51	
68	97	95	93	90	88	85	83	81	78	76	74	71	69	67	65	63	63	58	56	54	52	
69	98	95	93	90	88	85	83	81	79	77	74	72	70	67	65	63	63	59	57	55	53	
70	98	95	93	90	88	86	83	81	79	77	74	72	70	68	66	64	64	60	57	55	53	
71	98	95	93	90	88	86	84	81	79	77	75	73	70	68	66	64	64	60	58	56	54	
72	98	95	93	91	88	86	84	82	79	77	75	73	71	69	67	65	65	61	59	57	55	
73	98	95	93	91	88	86	84	82	80	78	75	73	71	69	67	65	65	61	59	57	55	
74	98	95	93	91	89	86	84	82	80	78	76	74	72	70	68	66	66	62	60	58	56	
75	98	95	93	91	89	87	84	82	80	78	76	74	72	70	68	66	66	62	60	58	56	
76	98	95	93	91	89	87	85	82	80	78	76	74	72	70	68	66	66	63	61	59	57	
77	98	95	93	91	89	87	85	83	81	79	77	75	73	71	69	67	67	63	61	59	58	
78	98	96	93	91	89	87	85	83	81	79	77	75	73	71	69	67	67	63	62	60	58	
79	98	96	93	91	89	87	85	83	81	79	77	75	73	71	69	68	68	64	62	60	59	
80	98	96	94	91	89	87	85	83	81	79	77	75	74	72	70	68	68	64	63	61	59	

t	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5	19.0	19.5	20.0	20.5	21.0	
35	95	91	86	82	77	72	68	64	59	55	50	46	42	38	33	29	29	21	17	13	9	
36	95	91	86	82	78	73	69	64	60	56	52	48	43	39	35	31	31	23	19	15	11	
37	96	91	87	82	78	74	70	66	61	57	53	49	45	41	37	33	33	25	21	17	13	
38	96	91	87	83	79	74	70	66	62	58	54	50	46	42	38	34	34	27	23	19	15	
39	96	92	87	83	79	75	71	67	63	59	55	51	47	43	40	36	36	28	25	21	17	
40	96	92	88	84	80	76	72	68	64	60	56	52	49	45	41	37	37	30	26	23	19	
41	96	92	88	84	80	76	72	68	65	61	57	53	50	46	42	39	39	32	28	25	21	
42	96	92	88	84	80	77	73	69	65	62	58	54	51	47	44	40	40	33	30	26	23	
43	96	92	88	85	81	77	73	70	66	63	59	55	52	48	45	42	42	35	31	28	25	
44	96	92	89	85	81	78	74	70	67	63	60	56	53	50	46	43	43					