Dewpoint to Grains Conversion

Dewpoint Temp.	Grains per Pound
100	302.3
99	292.7
98	283.4
97	274.4
96	265.6
95	257.1
94	248.9
93	240.9
92	233.1
91	225.6
90	218.3
89	211.2
88	204.3
87	197.7
86	191.2
85	184.9
84	178.8
83	173
82	167.2
81	161.7
80	156.3
79	151.1
78	146
77	141.1
76	136.4
75	131.7
74	127.3
73	123
72	118.8
71	114.7
70	110.7
69	107
68	103.2
67	99.7
66	96.2
65	92.8
64	89.6
63	86.5
62	83.4
61	80.4
60	77.6
59	74.8
58	72.1
57	69.5
56	67
55	64
54	62.3
53	60
52	57.8
51	55.7

Dewpoint Temp.	Grains per Pound
50	53.6
49	51.6
48	49.7
47	47.8
46	46.1
45	44.3
44	42.6
43	41
42	39.5
41	38
40	36.5
39	35.1
38	33.7
37	32.4
36	31.2
35	29.9
34	28.8
33	27.6
32	26.5
31	25.3
30	24.2
29	23.1
28	22
27	21
26	20.1
25	19.1
24	18.2
23	17.4
22	16.6
21	15.8
20	15.1
19	14.4
18	13.7
17	13
16	12.4
15	11.8
14	11.2
13	10.7
12	10.2
11	9.7
10	9.2
9	8.8
8	8.3
7	7.9
6	7.5
5	7.1
4	6.8
3	6.4
2	6.1
1	5.8
0	5.5

Dewpoint Temp.	Grains per Pound
– 1	5.23
– 2	4.96
– 3	4.71
– 4	4.46
– 5	4.23
– 6	4.01
– 7	3.79
– 8	3.59
– 9	3.41
– 10	3.23
– 11	3.05
– 12	2.89
– 13	2.73
– 14	2.58
– 15	2.44
– 16	2.31
– 17	2.18
– 18	2.06
– 19	1.95
– 20	1.83
– 21	1.74
– 22	1.63
– 23	1.55
– 24	1.45
– 25	1.37
– 26	1.29
– 27	1.22
– 28	1.15
– 29	1.08
– 30	1.02
– 31	0.96
– 32	0.91
– 33	0.85
– 34	0.8
– 35	0.75
– 36	0.71
– 37	0.69
– 38	0.63
– 39	0.59
– 40	0.55
– 41	0.52
– 42	0.49
– 43	0.46
– 44	0.43
– 45	0.4
– 46	0.38
– 47	0.35
– 48	0.33
– 49	0.31
– 50	0.29

Dewpoint Temp.	Grains per Pound
– 51	0.27
– 52	0.25
– 53	0.23
– 54	0.22
– 55	0.21
– 56	0.19
– 57	0.18
– 58	0.17
– 59	0.15
– 60	0.14
– 61	0.13
– 62	0.13
– 63	0.12
– 64	0.11
– 65	0.1
– 66	0.09
– 67	0.09
– 68	0.08
– 69	0.07
– 70	0.07
– 71	0.06
– 72	0.06
– 73	0.05
– 74	0.05
– 75	0.05
– 76	0.04
– 77	0.04
– 78	0.04
– 79	0.03
– 80	0.03
– 81	0.03
– 82	0.03
– 83	0.02
– 84	0.02
– 85	0.02
– 86	0.02
– 87	0.02
– 88	0.02
– 89	0.01
– 90	0.01
– 91	0.01
– 92	0.01
– 93	0.01
– 94	0.01
– 95	0.01
– 96	0.01
– 97	0.01
– 98	0.01
– 99	0.01
– 100	0.01

Drying
Formula:
GPP = Grains per Pound
I = Inlet GPP
O = Outlet GPP
CFM = Cubic Ft. per Min. AirFlow
4.5 = constant
lbs/hr = pounds of water per hour removed
7000 = 7,000 grains per pound of water

Formula:
lbs/hr = CFM x 4.5 x (I-O) / 7000

Example: How many pounds of water per hour is removed by a 5000 CFM desiccant with an inlet dewpoint of 50 degrees and an outlet of 17 degrees

Formula:
lbs/hr = 5000 x 4.5 x (53.6-13) / 7000
Answer:
130.5 pounds per hour
In Gallons:
130.5 / 8.35 lbs/gal = **15.6 gal per hour**