**Приложение П2**

**Таблица П2**

****

**Приложение П4**

**Таблица П4**

**Элементарный состав природных и попутных газов**

|  |
| --- |
| **Природные газы** |
| Месторождение  | Состав газа % объема |
| **CH4** | **C2H6** | **C3H8** | **C4H10** | **C5H12 и >** | **CO2** | **H2S** | **N2** |
| Северо-Ставропольское | 98,8 | 0,3 | 0,2 | 0,1 | - | 0,2 | - | 0,4 |
| Ключевское | 79,8 | 6,0 | 7,5 | 3,8 | 2,6 | 0,2 | - | 0,1 |
| Березовское | 95,1 | 1,1 | 0,3 | - | 0,1 | 0,4 | - | 3,0 |
| Уренгойское | 97,84 | 0,1 | 0,03 | 0,02 | 0,01 | 0,3 | - | 1,7 |
| Самотлорское | 76,94 | 4,87 | 7,84 | 5,27 | 1,95 | 0,21 | 1,2 | 1,72 |
| Медвежье | 98,78 | 0,1 | 0,02 | - | - | 0,1 | - | 1,0 |
| Оренбургское | 84,0 | 6,0 | 1,6 | 1,7 | 2,7 | 0,5 | - | 3,5 |
| Шатлыкское | 95,58 | 1,99 | 0,35 | 0,1 | 0,05 | 1,15 | - | 0,78 |
| Ямбургское | 89,67 | 4,39 | 1,64 | 0,74 | 2,36 | 0,94 | - | 0,26 |
| Дашаво-Угерское | 96,0 | 0,2 | 0,3 | 0,1 | - | 0,4 | - | 3,0 |
| Выктульское | 81,8 | 8,8 | 2,8 | 1,08 | 0,12 | 0,3 | - | 5,1 |
| Тазовское | 98,6 | 0,1 | 0,03 | 0,06 | 0,01 | 0,2 | - | 1,0 |
| Новопортовское | 88,1 | 6,6 | 2,2 | 0,19 | 0,01 | 0,4 | - | 2,5 |
| Саратовское | 91,9 | 2,1 | 1,3 | 0,4 | 0,1 | 1,2 | - | 3,0 |
| Новодмитровское | 90,0 | 2,0 | 1,0 | 1,7 | 4,8 | 0,3 | - | 0,2 |
| Тарасовское | 54,16 | 13,3 | 16,44 | 10,59 | 3,56 | 0,48 | - | 1,47 |
| Варьеганское | 59,33 | 10,26 | 13,51 | 10,7 | 4,0 | 0,69 | - | 1,51 |
| **Попутные газы** |
| Месторождение  | Состав газа % объема |
| **CH4** | **C2H6** | **C3H8** | **C4H10** | **C5H12 и >** | **CO2** | **H2S** | **N2** |
| Ромашкинское | 40,0 | 19,5 | 18,0 | 7,5 | 4,9 | 0,1 | - | 10,0 |
| Туймазинское | 32,0 | 14,0 | 12,0 | 7,5 | 5,5 | 0,7 | 0,8 | 27,5 |
| Бавлинское | 38,5 | 21,0 | 20,0 | 8,0 | 3,5 | - | - | 9,0 |
| Узеньское | 50,2 | 20,0 | 16,8 | 7,7 | 3,0 | - | - | 2,3 |
| Шкаповское | 41,2 | 15,0 | 15,8 | 6,9 | 4,0 | 0,1 | - | 17,0 |
| Пермское | 38,7 | 22,6 | 10,7 | 2,7 | 0,7 | - | 0,8 | 23,8 |
| Соколово-Горское | 53,0 | 9,0 | 11,2 | 10,0 | 5,8 | 1,0 | - | 10,0 |

**Приложение П5**

**Таблица П5-1**

**Термодинамические свойства воды и водяного пара в состоянии насыщения (по температуре)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  *tS*  | *РS*  | *v′*  | *v″*  | *h′*  | *h″*  | *r*  | *s′*  | *s″*  |
| °С  | бар  | м3/кг  | м3/кг  | кДж/кг  | кДж/кг  | кДж/кг  | кДж/(кг·К)  | кДж/(кг·К)  |
| 0  | 0,006108  | 0,0010002  | 206,32  | -0,04  | 2501,0  | 2501,0  | -0,0002  | 9,1565  |
| 0,01  | 0,006112  | 0,0010002  | 206,20  | 0,000614  | 2501,0  | 2501,0  | 0,0000  | 9,1560  |
| 10  | 0,012271  | 0,0010003  | 106,419  | 41,99  | 2519,4  | 2477,4  | 0,1510  | 8,9009  |
| 20  | 0,023368  | 0,0010017  | 57,833  | 83,86  | 2537,7  | 2453,8  | 0,2963  | 8,6674  |
| 30  | 0,042417  | 0,0010043  | 32,929  | 125,66  | 2555,9  | 2430,2  | 0,4365  | 8,4537  |
| 40  | 0,073749  | 0,0010078  | 19,548  | 167,45  | 2404,2  | 2406,5  | 0,5721  | 8,2389  |
| 50  | 0,123350  | 0,0010121  | 12,048  | 209,26  | 2382,5  | 2382,5  | 0,7035  | 8,0771  |
| 60  | 0,199190  | 0,00101712  | 7,6807  | 251,09  | 2609,5  | 2358,4  | 0,8310  | 7,9106  |
| 70  | 0,311610  | 0,0010228  | 5,0479  | 292,97  | 2626,8  | 2333,8  | 0,9548  | 7,7565  |
| 80  | 0,47359  | 0,0010292  | 3,4104  | 334,92  | 2643,8  | 2308,9  | 1,0752  | 7,6135  |
| 90  | 0,70108  | 0,0010361  | 2,3624  | 376,94  | 2660,3  | 2283,4  | 1,1925  | 7,7805  |
| 100  | 1,01325  | 0,0010434  | 1,6738  | 419,06  | 2676,3  | 2257,2  | 1,3069  | 7,73564  |
| 110  | 1,4326  | 0,0010519  | 1,2106  | 461,32  | 2691,8  | 2230,5  | 1,4185  | 7,2402  |
| 120  | 1,9854  | 0,0010606  | 0,8920  | 503,7  | 2706,6  | 2209,9  | 1,5276  | 7,1310  |
| 130  | 2,7012  | 0,0010700  | 0,66851  | 546,3  | 2720,7  | 2174,4  | 1,6344  | 7,0281  |
| 140  | 3,6136  | 0,0010801  | 0,50875  | 589,1  | 2734,0  | 2144,9  | 1,7390  | 6,9307  |
| 150  | 4,7597  | 0,0010908  | 0,39261  | 632,2  | 2746,3  | 2114,1  | 1,8416  | 6,8381  |
| 160  | 6,1800  | 0,0011022  | 0,30685  | 675,5  | 2757,7  | 2082,2  | 1,9425  | 6,7498  |
| 170  | 7,9202  | 0,0011145  | 0,24259  | 719,1  | 2768,0  | 2048,9  | 2,0416  | 6,6652  |
| 180  | 10,027  | 0,0011275  | 0,19381  | 763,1  | 2777,1  | 2014,0  | 2,1393  | 6,5838  |
| 190  | 12,552  | 0,00114  | 0,15631  | 807,5  | 2784,9  | 1977,4  | 2,2356  | 6,5052  |
| 200  | 15,551  | 0,0011565  | 0,12714  | 852,4  | 2791,4  | 1939,0  | 2,3307  | 6,4289  |
| 210  | 19,079  | 0,0011726  | 0,10422  | 897,8  | 2796,4  | 1898,6  | 2,4247  | 6,3546  |
| 220  | 23,201  | 0,0011900  | 0,08602  | 943,7  | 2799,9  | 1856,2  | 2,5178  | 6,2819  |
| 230  | 27,979  | 0,0012087  | 0,07143  | 990,3  | 2801,7  | 1811,4  | 2,6102  | 6,2104  |
| 240  | 33,480  | 0,0012291  | 0,05964  | 1037,6  | 2801,6  | 1764,0  | 2,7021  | 6,1397  |
| 250  | 39,776  | 0,0012513  | 0,05002  | 1085,8  | 2799,5  | 1713,7  | 2,7936  | 6,0693  |
| 260  | 46,940  | 0,0012756  | 0,04212  | 1135,0  | 2795,2  | 1660,2  | 2,8850  | 5,9989  |
| 270  | 55,051  | 0,0013025  | 0,03557  | 1185,4  | 2788,3  | 1602,9  | 2,9766  | 5,9278  |

**окончание табл.П5-1**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *tS*  | *РS*  | *v′*  | *v″*  | *h′*  | *h″*  | *r*  | *s′*  | *s″*  |
| °С  | бар  | м3/кг  | м3/кг  | кДж/кг  | кДж/кг  | кДж/кг  | кДж/(кг·К)  | кДж/(кг·К)  |
| 280  | 64,191  | 0,0013324  | 0,03010  | 1237,0  | 2778,6  | 1541,6  | 3,0687  | 5,8555  |
| 290  | 74,448  | 0,0013659  | 0,02551  | 1290,3  | 2765,4  | 1475,1  | 3,1616  | 5,7811  |
| 300  | 85,917  | 0,0014041  | 0,02162  | 1345,4  | 2748,4  | 1403,0  | 3,2559  | 5,7037  |
| 310  | 9,8697  | 0,0014480  | 0,01829  | 1402,9  | 2726,8  | 1323,9  | 3,3522  | 5,6224  |
| 320  | 112,90  | 0,0014995  | 0,01544  | 1463,4  | 2699,6  | 1236,2  | 3,4513  | 5,5356  |
| 340  | 146,08  | 0,0016390  | 0,01078  | 1596,8  | 2622,3  | 1025,5  | 3,6638  | 5,3363  |
| 350  | 165,37  | 0,0017407  | 0,00882  | 1672,9  | 2566,1  | 893,2  | 3,7816  | 5,2149  |
| 360  | 186,74  | 0,0018930  | 0,006970  | 1763,1  | 2485,7  | 722,6  | 3,9189  | 5,0603  |
| 370  | 210,53  | 0,002231  | 0,004958  | 1896,2  | 2335,7  | 439,5  | 4,1198  | 4,8031  |
| 374,12  | 221,15  | 0,003147  | 0,003147  | 2095,2  | 2095,2  | 0  | 4,4237  | 4,4237  |

**Таблица П5-2**

**Термодинамические свойства воды и водяного пара в состоянии насыщения (по давлению)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *РS*  | *tS*  | *v′*  | *v″*  | *h′*  | *h″*  | *r*  | *s′*  | *s″*  |
| бар  | °С  | м3/кг  | м3/кг  | кДж/кг  | кДж/кг  | кДж/кг  | кДж/(кг·К)  | кДж/(кг·К)  |
| 0,010  | 13,034  | 0,0010006  | 87,982  | 54,71  | 2525,0  | 2470,3  | 0,1956  | 8,8278  |
| 0,015  | 17,511  | 0,0010012  | 67,006  | 73,45  | 2533,2  | 2459,8  | 0,2606  | 8,7236  |
| 0,020  | 19,029  | 0,0010015  | 61,229  | 79,80  | 2535,9  | 2456,1  | 0,2824  | 8,6892  |
| 0,025  | 21,735  | 0,0010021  | 52,282  | 91,12  | 2540,9  | 2449,8  | 0,3210  | 8,6290  |
| 0,030  | 25,178  | 0,0010029  | 42,967  | 105,51  | 2547,2  | 2441,7  | 0,3695  | 8,5545  |
| 0,035  | 27,172  | 0,0010035  | 38,443  | 113,84  | 2550,8  | 2437,0  | 0,3973  | 8,5123  |
| 0,040  | 29,828  | 0,0010043  | 33,237  | 124,94  | 2555,6  | 2430,7  | 0,4341  | 8,4573  |
| 0,045  | 31,420  | 0,0010048  | 30,503  | 131,60  | 2558,5  | 2426,9  | 0,4560  | 8,4249  |
| 0,050  | 33,60  | 0,0010055  | 27,172  | 140,70  | 2562,4  | 2421,7  | 0,4858  | 8,3813  |
| 0,055  | 34,93  | 0,0010059  | 25,338  | 146,27  | 2564,8  | 2418,5  | 0,5039  | 8,3550  |
| 0,060  | 36,78  | 0,0010066  | 23,020  | 154,01  | 2568,2  | 2414,2  | 0,5290  | 8,3189  |
| 0,065  | 37,93  | 0,0010070  | 21,703  | 158,81  | 2570,3  | 2411,5  | 0,5444  | 8,2968  |
| 0,070  | 38,49  | 0,0010072  | 21,101  | 161,12  | 2571,3  | 2410,2  | 0,5519  | 8,2863  |
| 0,075  | 39,02  | 0,0010074  | 20,532  | 163,38  | 2572,2  | 2408,8  | 0,5591  | 8,2760  |
| 0,080  | 40,32  | 0,0010079  | 19,241  | 168,77  | 2574,5  | 2405,7  | 0,5763  | 8,2517  |
| 0,085  | 41,53  | 0,0010084  | 18,106  | 173,87  | 2576,7  | 2402,8  | 0,5926  | 8,2289  |
| 0,090  | 42,69  | 0,0010089  | 17,102  | 178,69  | 2578,8  | 2400,1  | 0,6079  | 8,2076  |
| 0,095  | 43,79  | 0,0010094  | 16,206  | 183,28  | 2580,8  | 2397,5  | 0,6224  | 8,1875  |
| 0,100  | 44,83  | 0,0010098  | 15,402  | 187,66  | 2582,6  | 2394,9  | 0,6361  | 8,1685  |
| 0,200  | 58,98  | 0,0010166  | 8,0288  | 246,83  | 2607,7  | 2360,9  | 0,8182  | 7,9269  |
| 0,300  | 68,35  | 0,0010219  | 5,3998  | 286,05  | 2624,0  | 2337,9  | 0,9346  | 7,7811  |
| 0,400  | 75,89  | 0,0010265  | 3,9949  | 317,65  | 2636,8  | 2319,2  | 1,0261  | 7,6711  |
| 0,500  | 81,35  | 0,0010301  | 3,2415  | 340,57  | 2646,0  | 2305,4  | 1,0912  | 7,5951  |
| 0,600  | 85,95  | 0,0010333  | 2,7329  | 359,93  | 2653,6  | 2293,7  | 1,1454  | 7,5332  |
| 0,700  | 89,96  | 0,0010361  | 2,3658  | 376,77  | 2660,2  | 2283,4  | 1,1921  | 7,4811  |
| 0,800  | 93,51  | 0,0010387  | 2,0879  | 391,72  | 2666,0  | 2274,3  | 1,2330  | 7,4360  |
| 0,900  | 96,71  | 0,0010412  | 1,8701  | 405,21  | 2671,1  | 2265,9  | 1,2696  | 7,3963  |
| 1,000  | 99,63  | 0,0010434  | 1,6946  | 417,51  | 2675,7  | 2258,2  | 1,3027  | 7,3608  |
| 2,00  | 120,23  | 0,0010608  | 0,88592  | 504,7  | 2706,9  | 2202,2  | 1,5301  | 7,1286  |
| 3,00  | 133,54  | 0,0010735  | 0,60586  | 561,4  | 2725,5  | 2164,1  | 1,6717  | 6,9930  |

**Продолжение табл.П5-2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *РS*  | *tS*  | *v′*  | *v″*  | *h′*  | *h″*  | *r*  | *s′*  | *s″*  |
| *4,00*  | *143,62*  | *0,0010839*  | *0,4624*  | *604,7*  | *2738,5*  | *2133,8*  | *1,7764*  | *6,8966*  |
| *5,00*  | *151,85*  | *0,0010928*  | *0,37481*  | *640,1*  | *2748,5*  | *2108,4*  | *1,8604*  | *6,8215*  |
| *6,00*  | *158,84*  | *0,0011009*  | *0,31566*  | *670,4*  | *2756,4*  | *2086,0*  | *1,9368*  | *6,7598*  |
| *7,00*  | *164,96*  | *0,0011082*  | *0,27274*  | *697,1*  | *2762,9*  | *2065,8*  | *1,9918*  | *6,7074*  |
| *8,00*  | *170,42*  | *0,0011150*  | *0,24030*  | *720,9*  | *2768,4*  | *2047,5*  | *2,0457*  | *6,6618*  |
| *9,00*  | *175,36*  | *0,0011213*  | *0,2148*  | *742,6*  | *2773,0*  | *2030,4*  | *2,0941*  | *6,6212*  |
| *10,00*  | *179,88*  | *0,0011274*  | *0,19430*  | *762,6*  | *2777,0*  | *2014,4*  | *2,1382*  | *6,5847*  |
| *11,00*  | *184,06*  | *0,0011331*  | *0,17739*  | *781,1*  | *2780,4*  | *1999,3*  | *2,1786*  | *6,5515*  |
| *12,00*  | *187,96*  | *0,0011386*  | *0,1632*  | *798,4*  | *2783,4*  | *1985,0*  | *2,2160*  | *6,5210*  |
| *13,00*  | *191,60*  | *0,0011438*  | *0,15112*  | *814,7*  | *2786,0*  | *1971,3*  | *2,2509*  | *6,4927*  |
| *14,00*  | *195,04*  | *0,0011489*  | *0,1407*  | *830,1*  | *2788,4*  | *1958,3*  | *2,2836*  | *6,4665*  |
| *15,00*  | *198,28*  | *0,0011538*  | *0,13165*  | *844,7*  | *2790,4*  | *1945,7*  | *2,3144*  | *6,4418*  |
| *16,00*  | *201,37*  | *0,0011586*  | *0,12368*  | *858,6*  | *2792,2*  | *1933,6*  | *2,3436*  | *6,4187*  |
| *17,00*  | *204,30*  | *0,0011633*  | *0,11661*  | *871,8*  | *2793,8*  | *1922,0*  | *2,3712*  | *6,3967*  |
| *18,00*  | *207,10*  | *0,0011678*  | *0,11031*  | *884,6*  | *2795,1*  | *1910,5*  | *2,3976*  | *6,3759*  |
| *19,00*  | *209,79*  | *0,0011722*  | *0,10464*  | *896,8*  | *2796,4*  | *1899,6*  | *2,4227*  | *6,3561*  |
| *20,00*  | *212,37*  | *0,0011766*  | *0,09953*  | *908,6*  | *2797,4*  | *1888,8*  | *2,4468*  | *6,3373*  |
| *25,00*  | *223,94*  | *0,0011972*  | *0,07990*  | *962,0*  | *2800,8*  | *1838,8*  | *2,5543*  | *6,2536*  |
| *30,00*  | *233,84*  | *0,0012163*  | *0,06662*  | *1008,4*  | *2801,9*  | *1793,5*  | *2,6455*  | *6,1832*  |
| *35,00*  | *242,54*  | *0,0012342*  | *0,05702*  | *1049,8*  | *2801,3*  | *1751,5*  | *2,7253*  | *6,1218*  |
| *40,00*  | *250,33*  | *0,0012521*  | *0,04974*  | *1087,5*  | *2799,4*  | *1711,9*  | *2,7967*  | *6,0670*  |
| *45,00*  | *257,41*  | *0,0012691*  | *0,04402*  | *1122,2*  | *2796,5*  | *1674,3*  | *2,8614*  | *6,0171*  |
| *50,00*  | *263,92*  | *0,0012858*  | *0,03941*  | *1154,6*  | *2792,8*  | *1638,2*  | *2,9209*  | *5,9712*  |
| *60,00*  | *275,56*  | *0,0013187*  | *0,03241*  | *1213,9*  | *2783,3*  | *1569,4*  | *3,0277*  | *5,8878*  |
| *70,00*  | *285,80*  | *0,0013514*  | *0,02734*  | *1267,7*  | *2771,4*  | *1503,7*  | *3,1225*  | *5,8126*  |
| *80,00*  | *294,98*  | *0,0013843*  | *0,02349*  | *1317,5*  | *2757,5*  | *1440,0*  | *3,2083*  | *5,7430*  |
| *90,00*  | *303,31*  | *0,0014179*  | *0,02046*  | *1364,2*  | *2741,8*  | *1377,6*  | *3,2875*  | *5,6773*  |
| *100,00*  | *310,96*  | *0,0014526*  | *0,01800*  | *1408,6*  | *2724,4*  | *1315,8*  | *3,3616*  | *5,6143*  |
| *105,00*  | *314,57*  | *0,0014704*  | *0,01694*  | *1430,1*  | *2715,2*  | *1285,1*  | *3,3970*  | *5,5835*  |
| *110,00*  | *318,04*  | *0,0014887*  | *0,01597*  | *1451,2*  | *2705,4*  | *1254,2*  | *3,4316*  | *5,5531*  |
| *115,00*  | *321,39*  | *0,0015074*  | *0,01507*  | *1472,1*  | *2695,3*  | *1223,2*  | *3,4654*  | *5,5229*  |
| *120,00*  | *324,64*  | *0,0015267*  | *0,01425*  | *1492,6*  | *2684,4*  | *1192,2*  | *3,4986*  | *5,4930*  |
| *122,00*  | *325,90*  | *0,0015345*  | *0,01394*  | *1500,7*  | *2680,4*  | *1179,7*  | *3,5117*  | *5,4810*  |

**Окончание табл.П5-2**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *РS*  | *tS*  | *v′*  | *v″*  | *h′*  | *h″*  | *r*  | *s′*  | *s″*  |
| *124,00*  | *327,15*  | *0,0015425*  | *0,01363*  | *1508,8*  | *2676,0*  | *1167,2*  | *3,5247*  | *5,4690*  |
| *126,00*  | *328,39*  | *0,0015506*  | *0,01334*  | *1516,9*  | *2671,6*  | *1154,7*  | *3,5376*  | *5,4572*  |
| *128,00*  | *329,61*  | *0,0015588*  | *0,01305*  | *1524,9*  | *2667,0*  | *1142,1*  | *3,5505*  | *5,4453*  |
| *130,00*  | *330,81*  | *0,0015670*  | *0,01277*  | *1533,0*  | *2662,4*  | *1129,4*  | *3,5633*  | *5,4333*  |
| *132,00*  | *332,00*  | *0,0015755*  | *0,01250*  | *1541,0*  | *2657,7*  | *1116,7*  | *3,5760*  | *5,4214*  |
| *134,00*  | *333,18*  | *0,0015840*  | *0,01224*  | *1548,9*  | *2653,0*  | *1104,1*  | *3,5886*  | *5,4095*  |
| *136,00*  | *334,34*  | *0,0015927*  | *0,01199*  | *1556,9*  | *2648,2*  | *1091,3*  | *3,6012*  | *5,3975*  |
| *138,00*  | *335,49*  | *0,0016015*  | *0,01174*  | *1564,8*  | *2643,3*  | *1078,5*  | *3,6137*  | *5,3856*  |
| *140,00*  | *336,63*  | *0,0016104*  | *0,01149*  | *1572,8*  | *2638,3*  | *1065,5*  | *3,6262*  | *5,3737*  |
| *142,00*  | *337,75*  | *0,0016195*  | *0,01126*  | *1580,7*  | *2633,2*  | *1052,5*  | *3,6387*  | *5,3616*  |
| *144,00*  | *338,86*  | *0,0016288*  | *0,01102*  | *1588,6*  | *2628,1*  | *1039,5*  | *3,6511*  | *5,3495*  |
| *146,00*  | *339,96*  | *0,0016382*  | *0,01080*  | *1596,5*  | *2622,9*  | *1026,4*  | *3,6635*  | *5,3375*  |
| *148,00*  | *341,04*  | *0,0016483*  | *0,01057*  | *1604,3*  | *2617,1*  | *1012,8*  | *3,6755*  | *5,3245*  |
| *150,00*  | *342,12*  | *0,0016580*  | *0,01035*  | *1612,2*  | *2611,6*  | *999,4*  | *3,6877*  | *5,3122*  |
| *152,00*  | *343,18*  | *0,0016680*  | *0,01014*  | *1620,0*  | *2606,1*  | *986,1*  | *3,6999*  | *5,2999*  |
| *154,00*  | *344,23*  | *0,0016782*  | *0,009930*  | *1627,9*  | *2600,4*  | *972,5*  | *3,7121*  | *5,2874*  |
| *156,00*  | *345,27*  | *0,0016886*  | *0,009726*  | *1635,7*  | *2594,6*  | *958,9*  | *3,7242*  | *5,2749*  |
| *158,00*  | *346,30*  | *0,0016992*  | *0,009526*  | *1643,6*  | *2588,7*  | *945,1*  | *3,7364*  | *5,2623*  |
| *160,00*  | *347,32*  | *0,0017101*  | *0,009330*  | *1651,5*  | *2582,7*  | *931,2*  | *3,7486*  | *5,2496*  |
| *162,00*  | *348,32*  | *0,0017215*  | *0,009138*  | *1659,4*  | *2576,6*  | *917,2*  | *3,7609*  | *5,2368*  |
| *164,00*  | *349,32*  | *0,0017327*  | *0,008949*  | *1667,4*  | *2570,4*  | *903,0*  | *3,7731*  | *5,2238*  |
| *166,00*  | *350,31*  | *0,0017444*  | *0,008763*  | *1675,4*  | *2564,0*  | *888,6*  | *3,7855*  | *5,2108*  |
| *168,00*  | *351,29*  | *0.0017565*  | *0,008581*  | *1683,5*  | *2557,5*  | *874,0*  | *3,7978*  | *5,1975*  |
| *170,00*  | *352,26*  | *0,0017690*  | *0,008401*  | *1691,6*  | *2550,8*  | *859,2*  | *3,8103*  | *5,1841*  |
| *180,00*  | *356,96*  | *0,0018380*  | *0,007534*  | *1733,4*  | *2514,4*  | *781,0*  | *3,8739*  | *5,1135*  |
| *190,00*  | *361,44*  | *0,0019231*  | *0,006700*  | *1778,2*  | *2470,1*  | *691,9*  | *3,9417*  | *5,0321*  |
| *200,00*  | *365,71*  | *0,002038*  | *0,005873*  | *1828,8*  | *2413,8*  | *585,0*  | *4,0181*  | *4,9338*  |
| *210,00*  | *369,79*  | *0,002218*  | *0,005006*  | *1892,2*  | *2340,2*  | *448,0*  | *4,1137*  | *4,8106*  |
| *220,00*  | *373,68*  | *0,002675*  | *0,003757*  | *2007,7*  | *2192,5*  | *184,8*  | *4,2891*  | *4,5748*  |

**Таблица П5-3**

**Термодинамические свойства воды и водяного пара (по давлению и температуре)**

**(жирным шрифтом выделены параметры недогретой воды, обычным шрифтом – перегретого пара)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | p = 0,01бар | p = 0,02 бар  | p = 0,03 бар  | p = 0,04 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| °С  | м3/кг  | кДж/кг  | кДж/(кг·К)  | м3/кг  | кДж/кг  | кДж/(кг·К)  | м3/кг  | кДж/кг  | кДж/(кг·К)  | м3/кг  | кДж/кг  | кДж/(кг·К)  |
| **0**  | **0,00102**  | **0,0**  | **-0,001**  | **0,001**  | **0,0**  | **-0,0010**  | **0,001**  | **0,0**  | **-0,0001**  | **0,0010**  | **0,0**  | **-0,0001**  |
| 10  | 130,60  | 2519,5  | 8,995  | **0,0010002**  | **42,0**  | **0,1510**  | **0,0010002**  | **42,0**  | **0,1510**  | **0,0010002**  | **42,0**  | **0,1510**  |
| 20  | 135,23  | 2538,1  | 9,060  | 67,58  | 2537,8  | 8,7396  | **0,0010017**  | **83,9**  | **0,2963**  | **0,0010017**  | **83,9**  | **0,2963**  |
| 40  | 144,47  | 2575,5  | 9,1837  | 72,21  | 2575,3  | 8,8632  | 48,13  | 2575,0  | 8,6755  | 36,08  | 2574,8  | 8,5421  |
| 80  | 162,95  | 2650,6  | 9,4093  | 81,46  | 2650,4  | 9,0891  | 54,30  | 2650,3  | 8,9016  | 40,72  | 2650,2  | 8,7685  |
| 120  | 181,42  | 2726,2  | 9,6122  | 90,70  | 2726,1  | 9,2921  | 60,46  | 2726,0  | 9,1048  | 45,34  | 2726,0  | 8,9718  |
| 160  | 199,89  | 2802,6  | 9,7971  | 99,94  | 2802,5  | 9,4771  | 66,62  | 2802,4  | 9,2898  | 49,96  | 2802,4  | 9,1570  |
| 200  | 218,3  | 2879,7  | 9,9674  | 109,17  | 2879,7  | 9,6475  | 72,78  | 2879,6  | 9,4603  | 54,58  | 2879,6  | 9,3274  |
| 240  | 236,8  | 2957,7  | 10,1257  | 118,40  | 2957,7  | 9,8058  | 78,93  | 2957,7  | 9,6186  | 59,20  | 2957,6  | 9,4858  |
| 280  | 255,3  | 3036,7  | 10,2739  | 127,64  | 3036,7  | 9,9539  | 85,09  | 3036,6  | 9,7668  | 63,81  | 3036,6  | 9,6340  |
| 320  | 273,7  | 3116,6  | 10,4134  | 136,87  | 3116,6  | 10,0934  | 91,24  | 3116,6  | 9,9063  | 68,43  | 3116,6  | 9,7735  |
| 360  | 292,2  | 3197,5  | 10,5454  | 146,10  | 3197,5  | 10,2255  | 97,40  | 3197,5  | 10,0383  | 73,05  | 3197,5  | 9,9055  |
| 400  | 310,7  | 3279,5  | 10,6709  | 155,33  | 3279,5  | 10,351  | 103,55  | 3279,5  | 10,164  | 77,66  | 3279,5  | 10,001  |
| 440  | 329,1  | 3362,4  | 10,790  | 164,56  | 3362,4  | 10,470  | 109,70  | 3362,4  | 10,283  | 82,28  | 3362,4  | 10,150  |
| 480  | 347,6  | 3446,5  | 10,905  | 173,8  | 3446,5  | 10,585  | 115,86  | 3446,5  | 10,398  | 86,89  | 3446,5  | 10,265  |
| 520  | 366,0  | 3531,7  | 11,015  | 183,0  | 3531,7  | 10,695  | 122,01  | 3531,6  | 10,508  | 91,51  | 3531,6  | 10,375  |
| 560  | 384,50  | 3618,0  | 11,121  | 192,2  | 3617,9  | 10,802  | 128,17  | 3617,9  | 10,614  | 96,12  | 3617,9  | 10,482  |
| 600  | 402,96  | 3705,3  | 11,224  | 201,5  | 3705,3  | 10,904  | 134,32  | 3705,3  | 10,717  | 100,74  | 3705,3  | 10,584  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 0,05 бар | p = 0,06 бар  | p = 0,07 бар  | p = 0,08 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  |
| 10  | **0,0010002**  | **42,0**  | **0,1510**  | **0,0010002**  | **42,0**  | **0,1510**  | **0,0010002**  | **42,0**  | **0,1510**  | **0,0010002**  | **42,0**  | **0,1510**  |
| 20  | **0,0010017**  | **83,9**  | **0,2963**  | **0,0010017**  | **83,9**  | **0,2963**  | **0,0010017**  | **83,9**  | **0,2963**  | **0,0010017**  | **83,9**  | **0,2963**  |
| 30  | **0,0010043**  | **126,7**  | **0,4365**  | **0,0010043**  | **125,7**  | **0,4365**  | **0,0010043**  | **125,7**  | **0,4365**  | **0,0010043**  | **125,7**  | **0,4365**  |
| 40  | 28,86  | 2574,6  | 8,4385  | 24,04  | 2574,3  | 8,3537  | 20,60  | 2574.1  | 8,2819  | **0,0010078**  | **167,4**  | **0,5721**  |
| 80  | 32,57  | 2650,0  | 8,6652  | 27,13  | 2649,9  | 8,5808  | 23,25  | 2649,7  | 8,5093  | 20,34  | 2649,6  | 8,4474  |
| 120  | 36,27  | 2725,9  | 8,8687  | 30,22  | 2725,8  | 8,7843  | 25,90  | 2725,7  | 8,7130  | 22,66  | 2725,6  | 8,6512  |
| 160  | 39,97  | 2802,3  | 9,0539  | 33,30  | 2802,3  | 8,9696  | 28,54  | 2802,2  | 8,8984  | 24,97  | 2802,1  | 8,8366  |
| 200  | 43,66  | 2879,5  | 9,2244  | 36,38  | 2879,5  | 9,1402  | 31,18  | 2879,5  | 9,0689  | 27,28  | 2879,4  | 9,0072  |
| 240  | 47,36  | 2957,6  | 9,3828  | 39,46  | 2957,6  | 9,2986  | 33,82  | 2957,5  | 9,2274  | 29,59  | 2957,5  | 9,1657  |
| 280  | 51,05  | 3036,6  | 9,5310  | 42,54  | 3036,6  | 9,4468  | 36,46  | 3036,5  | 9,3756  | 31,90  | 3036,5  | 9,3139  |
| 320  | 54,74  | 3116,5  | 9,6705  | 45,62  | 3116,5  | 9,5863  | 39,10  | 3116,5  | 9,5151  | 34,21  | 3116,5  | 9,4535  |
| 360  | 58,44  | 3197,5  | 9,8025  | 48,70  | 3197,4  | 9,7184  | 41,74  | 3197,4  | 9,6472  | 36,52  | 3197,4  | 9,5855  |
| 400  | 62,13  | 3279,4  | 9,9280  | 51,77  | 3279,4  | 9,8439  | 44,38  | 3279,4  | 9,7727  | 38,83  | 3279,4  | 9,7111  |
| 440  | 65,82  | 3362,4  | 10,048  | 54,85  | 3362,4  | 9,9637  | 47,01  | 3362,4  | 9,8925  | 41,14  | 3362,4  | 9,8309  |
| 480  | 69,51  | 3446,5  | 10,162  | 57,93  | 3446,5  | 10,078  | 49,65  | 3446,5  | 10,007  | 43,44  | 3446,5  | 9,9456  |
| 520  | 73,21  | 3531,7  | 10,273  | 61,00  | 3531,7  | 10,188  | 52,29  | 3531,6  | 10,117  | 45,75  | 3531,6  | 10,056  |
| 560  | 76,90  | 3617,9  | 10,379  | 64,08  | 3617,9  | 10,295  | 54,93  | 3617,9  | 10,223  | 48,06  | 3617,9  | 10,162  |
| 600  | 80,59  | 3705,3  | 10,481  | 67,16  | 3705,3  | 10,397  | 57,56  | 3705,3  | 10,326  | 50,37  | 3705,2  | 10,264  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 0,09 бар | p = 0,1 бар  | p = 0,2 бар  | p = 0,3 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| **0**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  |
| **20**  | **0,0010017**  | **83,9**  | **0,2963**  | **0,0010017**  | **83,9**  | **0,2963**  | **0,0010017**  | **83,9**  | **0,2963**  | **0,0010017**  | **83,9**  | **0,2963**  |
| **40**  | **0,0010078**  | **167,4**  | **0,5721**  | **0,0010078**  | **167,4**  | **0,5721**  | **0,0010078**  | **167.5**  | **0.5721**  | **0,0010078**  | **167,5**  | **0,5721**  |
| 50  | 16,53  | 2592,6  | 8,2243  | 14,87  | 2592,3  | 8,1752  | **0,0010121**  | **209,3**  | **0,7035**  | **0,0010121**  | **209.3**  | **0,7035**  |
| 60  | 17,05  | 2611,5  | 8,2821  | 15,34  | 2611,3  | 8,2331  | **0,0010171**  | **251,1**  | **0,8310**  | **0,0010171**  | **251,1**  | **0,8310**  |
| 80  | 18,08  | 2649,4  | 8,3927  | 16,27  | 2649,3  | 8,3437  | 8,119  | 2647,8  | 8,0205  | 5,402  | 2646,3  | 7,8301  |
| 120  | 20,14  | 2725,5  | 8,5967  | 18,12  | 2725,4  | 8,5479  | 9,052  | 2724,4  | 8,2261  | 6,027  | 2723,5  | 8,0371  |
| 160  | 22,20  | 2802,1  | 8,7822  | 19,98  | 2802,0  | 8,7334  | 9,980  | 2801,3  | 8,4124  | 6,649  | 2800,7  | 8,2241  |
| 200  | 24,25  | 2879,4  | 8,9528  | 21,82  | 2879,3  | 8,9041  | 10,907  | 2878,8  | 8,5834  | 7,268  | 2878,4  | 8,3956  |
| 240  | 26,30  | 2957,5  | 9,1113  | 23,67  | 2957,4  | 9,0626  | 11,832  | 2957,0  | 8,7422  | 7,885  | 2956,7  | 8,5545  |
| 280  | 28,36  | 3036,5  | 9,2595  | 25,52  | 3036,5  | 9,2109  | 12,757  | 3036,1  | 8,8906  | 8,502  | 3035,9  | 8,7031  |
| 320  | 30,41  | 3116,4  | 9,3991  | 27,37  | 3116,4  | 9,3504  | 13,681  | 3116,2  | 9,0302  | 9,119  | 3115,9  | 8,8428  |
| 360  | 32,46  | 3197,4  | 9,5312  | 29,22  | 3197,4  | 9,4825  | 14,605  | 3197,1  | 9,1624  | 9,735  | 3197,0  | 8,9750  |
| 400  | 34,51  | 3279,4  | 9,6567  | 31,06  | 3279,4  | 9,6081  | 15,529  | 3279,2  | 9,2880  | 10,351  | 3279,0  | 9,1007  |
| 440  | 36,57  | 3362,4  | 9,7765  | 32,91  | 3362,4  | 9,7279  | 16,45  | 3362,2  | 9,4078  | 10,967  | 3362,1  | 9,2205  |
| 480  | 38,62  | 3446,5  | 9,8912  | 34,76  | 3446,4  | 9,8426  | 17,38  | 3446,3  | 9,5225  | 11,583  | 3446,2  | 9,3353  |
| 520  | 40,67  | 3531,6  | 10,001  | 36,60  | 3531,6  | 9,9527  | 18,30  | 3531,5  | 9,6327  | 12,199  | 3531,4  | 9,4455  |
| 560  | 42,72  | 3617,9  | 10,107  | 38,45  | 3617,9  | 10,059  | 19,22  | 3617,8  | 9,7388  | 12,81  | 3617,7  | 9,5516  |
| 600  | 44,77  | 3705,2  | 10,210  | 40,29  | 3705,2  | 10,161  | 20,15  | 3705,1  | 9,8413  | 13,43  | 3705,1  | 9,6541  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 0,4 бар | p = 0,5 бар  | p = 0,6 бар  | p = 0,7 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  |
| 10  | **0,0010002**  | **42,0**  | **0,1510**  | **0,0010002**  | **42,0**  | **0,1510**  | **0,0010002**  | **42,0**  | **0,1510**  | **0,0010002**  | **42,1**  | **0,1510**  |
| 30  | **0,0010043**  | **125,7**  | **0,4365**  | **0,0010043**  | **125,7**  | **0,4365**  | **0,0010043**  | **125,7**  | **0,4365**  | **0,0010043**  | **125,7**  | **0,4365**  |
| 70  | **0,0010228**  | **293,0**  | **0,9548**  | **0,0010228**  | **293,0**  | **0,9548**  | **0,0010228**  | **293,0**  | **0,9548**  | **0,0010228**  | **293,0**  | **0,9548**  |
| 80  | 4,044  | 2644,9  | 7,6940  | **0,0010292**  | **334,9**  | **1,0752**  | **0,0010292**  | **334,9**  | **1,0752**  | **0,0010292**  | **334,9**  | **1,0752**  |
| 90  | 4,162  | 2664,4  | 7,7485  | 3,324  | 2663,0  | 7.6425  | 2,765  | 2661,7  | 7,5554  | 2,366  | 2660,3  | 7,4813  |
| 120  | 4,515  | 2722,6  | 7,9025  | 3,608  | 2721,7  | 7,7977  | 3,003  | 2720,7  | 7,7116  | 2,571  | 27197  | 7,6386  |
| 160  | 4,983  | 2800,1  | 8,0903  | 3,983  | 2799,5  | 7,9862  | 3,317  | 2798,8  | 7,9009  | 2,841  | 2798,2  | 7,8286  |
| 200  | 5,448  | 2877,9  | 8,2621  | 4,356  | 2877,5  | 8,1584  | 3,628  | 2877,0  | 8,0735  | 3,108  | 2876,6  | 8,0017  |
| 240  | 5,912  | 2956,4  | 8,4213  | 4,728  | 2956,1  | 8,3178  | 3,938  | 2955,7  | 8,2332  | 3,374  | 2955,4  | 8.l6I5  |
| 280  | 6,375  | 3035,6  | 8,5700  | 5,099  | 3035,4  | 8,4667  | 4,248  | 3035,1  | 8,3822  | 3,640  | 3034,8  | 8,3106  |
| 320  | 6,838  | 3115,8  | 8,7098  | 5,469  | 3115,5  | 8,6066  | 4,557  | 3115,3  | 8,5222  | 3,905  | 3115,1  | 8,4508  |
| 360  | 7,300  | 3196,8  | 8,8421  | 5,839  | 3196,6  | 8,7389  | 4,865  | 3196,5  | 8,6545  | 4,170  | 3196,3  | 8,5832  |
| 400  | 7,763  | 3258,9  | 8,9678  | 6,209  | 3278,7  | 8,8646  | 5,174  | 3278,6  | 8,7803  | 4,434  | 3278,4  | 8,7090  |
| 440  | 8,225  | 3362,0  | 9,0877  | 6,579  | 3361,9  | 8,9845  | 5,482  | 3361,7  | 8,9003  | 4,698  | 3361,6  | 8,8290  |
| 480  | 8,687  | 3446,1  | 9,2024  | 6,949  | 3446,0  | 9,0993  | 5,790  | 3445,9  | 9,0151  | 4,962  | 3445,8  | 8,9438  |
| 520  | 9,149  | 3531,3  | 9,3127  | 7,318  | 3531,2  | 9,2096  | 6,098  | 3531,1  | 9,1254  | 5,227  | 3531,0  | 9,0541  |
| 560  | 9,610  | 3617,6  | 9,4188  | 7,688  | 3617,5  | 9,3157  | 6,406  | 3617,4  | 9,2315  | 5,491  | 3617,3  | 9,1603  |
| 600  | 10,07  | 3705,0  | 9,5212  | 8,057  | 3704,9  | 9,4182  | 6,714  | 3704,8  | 9,3340  | 5,755  | 3704,8  | 9,2628  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 0,8 бар | p = 0,9 бар  | p = 1,0 бар  | p = 2,0 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010002**  | **0,0**  | **-0,0001**  | **0,0010001**  | **0,2**  | **-0,0001**  |
| 10  | **0,0010002**  | **42,1**  | **0,1510**  | **0,0010002**  | **42,1**  | **0,1510**  | **0,0010002**  | **42,1**  | **0,1510**  | **0,0010002**  | **42,2**  | **0,1510**  |
| 30  | **0,0010043**  | **125,7**  | **0,4365**  | **0,0010043**  | **125,7**  | **0,4365**  | **0,0010043**  | **125,8**  | **0,4365**  | **0,0010042**  | **125,8**  | **0,4364**  |
| 40  | **0,0010078**  | **167,5**  | **0,5721**  | **0,0010078**  | **167,5**  | **0,5721**  | **0,0010078**  | **167,5**  | **0,5721**  | **0,0010077**  | **167,6**  | **0,5720**  |
| 90  | **0,0010361**  | **376,9**  | **1,1925**  | **0,0010361**  | **377,0**  | **1.1925**  | **0,0010361**  | **377,0**  | **1,1925**  | **0,0010361**  | **377,0**  | **1,1924**  |
| 110  | 2,187  | 2698,9  | 7,5239  | 1,942  | 2697,8  | 7,4673  | 1,745  | 2696,7  | 7,4164  | **0,0010518**  | **461,4**  | **1,4184**  |
| 120  | 2,247  | 2718,8  | 7,5750  | 1,995  | 2717,8  | 7,5187  | 1,793  | 2716,8  | 7,4681  | 0,0010606  | 503,7  | 1,5276  |
| 160  | 2,484  | 2797,5  | 7,7658  | 2,206  | 2796,9  | 7,7103  | 1,984  | 2796.2  | 7,6605  | 0,9842  | 2789,5  | 7,3285  |
| 200  | 2,718  | 2876,1  | 7,9393  | 2,415  | 2875,6  | 7,8842  | 2,172  | 2875,2  | 7,8348  | 1,080  | 2870,4  | 7,5073  |
| 240  | 2,952  | 2955,0  | 8,0994  | 2,623  | 2954,7  | 8,0445  | 2,359  | 2954,3  | 7,9954  | 1,175  | 2950,8  | 7,6703  |
| 280  | 3,184  | 3034,6  | 8,2486  | 2,829  | 3034,3  | 8,1939  | 2,546  | 3034,0  | 8,1449  | 1,269  | 3031,2  | 7,8213  |
| 320  | 3,416  | 3114,9  | 8,3888  | 3,036  | 3114,7  | 8,3342  | 2,732  | 3114,4  | 8,2853  | 1,363  | 3112,2  | 7,9626  |
| 360  | 3,648  | 3196,1  | 8,5213  | 3,242  | 3195,9  | 8,4668  | 2,917  | 3195,7  | 8,4179  | 1,456  | 3193,8  | 8,0958  |
| 400  | 3,879  | 3278,3  | 8,6472  | 3,448  | 3278,1  | 8,5927  | 3,103  | 3278,0  | 8,5439  | 1,549  | 3276,4  | 8,2223  |
| 440  | 4,111  | 3361,5  | 8,7672  | 3,653  | 3361,3  | 8,7127  | 3,288  | 3361,2  | 8,6640  | 1,642  | 3359,8  | 8,3427  |
| 480  | 4,342  | 3445,7  | 8,8821  | 3,859  | 3445,6  | 8,8276  | 3,473  | 3445,4  | 8,7789  | 1,735  | 3444,3  | 8,4578  |
| 520  | 4,573  | 3530,9  | 8,9924  | 4,065  | 3530,8  | 8,9379  | 3,658  | 3530,7  | 8,8892  | 1,828  | 3529,7  | 8,5683  |
| 560  | 4,804  | 3617,3  | 9,0986  | 4,270  | 3617,2  | 9,0441  | 3,843  | 3617,1  | 8,9954  | 1,920  | 3616,2  | 8,6748  |
| 600  | 5,035  | 3704,7  | 9,2011  | 4,475  | 3704,6  | 9,1466  | 4,028  | 3704,5  | 9,0979  | 2,013  | 3703,7  | 8,7774  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 3,0 бар | p = 4,0 бар  | p = 5,0 бар  | p = 10,0 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0 40  | **0,0010001** **0,0010077**  | **0,3** **167,7**  | **-0,0001** **0,5720**  | **0,0010000** **0,0010076**  | **0,4** **167,8**  | **0,0001** **0,5720**  | **0,0010000** **0,0010076**  | **0,5** **167,9**  | **-0,0001** **0,5719**  | **0,0009997** **0,0010074**  | **1,0** **168,3**  | **-0,0001** **0,5717**  |
| 130  | **0,0010700**  | **546,3**  | **1,6343**  | **0,0010699**  | **546,4**  | **1,6342**  | **0,0010699**  | **546,5**  | **1,6341**  | **0,0010696**  | **546,8**  | **1,6336**  |
| 140  | 0,6170  | 2739,6  | 7,0274  | **0,0010800**  | **589,1**  | **1,7389**  | **0,0010800**  | **589,2**  | **1,7388**  | **0,0010796**  | **589,5**  | **1,7383**  |
| 150  | 0,6340  | 2761,2  | 7,0790  | 0,4708  | 2752,9  | 6,9308  | **0,0010908**  | **632,2**  | **1,8416**  | **0,0010904**  | **632,5**  | **1,8410**  |
| 160 170  | 0,6508 0,6674  | 2782,4 2803,4  | 7,1287 7,1767  | 0,4839 0,4967  | 2775,0 2796,8  | 6,9825 7,0322  | 0,3836 0,3942  | 2767,4 2789,9  | 6,8653 6,9169  | **0,0011019** **0,0011143**  | **675,7** **719,2**  | **1,9420** **2,0414**  |
| 180  | 0,6838  | 2824,3  | 7,2232  | 0,5094  | 2818,3  | 7,0802  | 0,4046  | 2812,1  | 6,9664  | 0,1944  | 2777,3  | 6,5854  |
| 200 240  | 0,7164 0,7805  | 2865,6 2947,2  | 7,3123 7,4780  | 0,5343 0,5831  | 2860,6 2943,5  | 7,1715 7,3398  | 0,4249 0,4646  | 2855,4 2939,9  | 7,0603 7,2314  | 0,2059 0,2275  | 2827,5 2920,5  | 6,6940 6,8826  |
| 280  | 0,8438  | 3028,5  | 7,6305  | 0,6311  | 3025,7  | 7,4939  | 0,5034  | 3022,8  | 7,3871  | 0,2480  | 3008,3  | 7,0475  |
| 320  | 0,9067  | 3110,0  | 7,7727  | 0,6785  | 3107,7  | 7,6372  | 0,5416  | 3105,5  | 7,5314  | 0,2678  | 3094,0  | 7,1971  |
| 360  | 0,9692  | 3192,0  | 7,9065  | 00,7257  | 3190,1  | 7,7716  | 0,5796  | 3183,3  | 7,6664  | 0,2873  | 3178,9  | 7,3356  |
| 400 440  | 1,031 1,094  | 3274,9 3358,5  | 8,0335 8,1542  | 0,7726 0,8193  | 3273,3 3357,2  | 7,8990 8,0201  | 0,6172 0,6548  | 3271,8 3355,9  | 7,7944 7,9157  | 0,3066 0,3256  | 3264,0 3349,3  | 7,4606 7,5890  |
| 480  | 1,156  | 3443,1  | 8,2696  | 0,8660  | 3442,0  | 8,1357  | 0,6922  | 3440,8  | 8,0316  | 0,3446  | 3435,1  | 7.7061  |
| 520  | 1,218  | 3485,8  | 8,3255  | 0,8893  | 3484,7  | 8,1917  | 0,7109  | 3483,6  | 8,0877  | 0,3540  | 3478,3  | 7,7627  |
| 560  | 1,279  | 3615,3  | 8,4868  | 0,9590  | 3614,4  | 8,3533  | 0,7668  | 3613,5  | 8,2495  | 0,3823  | 3609,1  | 7,9256  |
| 600  | 1,341  | 3702,9  | 8,5896  | 1,0055  | 3702,2  | 8,4561  | 0,8040  | 3701,4  | 8,3525  | 0,4010  | 3697,4  | 8,0545  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 15,0 бар | p = 20,0 бар  | p = 25,0 бар  | p = 30,0 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0  | **0,0009995**  | **1,5**  | **0,0000**  | **0,0009992**  | **2,0**  | **0,0000**  | **0,0009990**  | **2,5**  | **0,00004**  | **0,0009987**  | **3,0**  | **0,0001**  |
| 40  | **0,0010071**  | **168,8**  | **0,5715**  | **0,0010069**  | **169,2**  | **0,5713**  | **0,0010067**  | **169,7**  | **0,5711**  | **0,0010065**  | **170,1**  | **0,5709**  |
| 120  | **0,0010599**  | **504,6**  | **1,5264**  | **0,0010596**  | **505,0**  | **1,5260**  | **0,0010593**  | **505,3**  | **1,5255**  | **0,0010590**  | **505,7**  | **1,5250**  |
| 190  | **0,0011413**  | **807,6**  | **2,2352**  | **0,0011408**  | **807,9**  | **2,2345**  | **0,0011403**  | **808,1**  | **2,2338**  | **0,0011399**  | **808,3**  | **2,2330**  |
| 210  | 0,1366  | 2822,9  | 6,5099  | **0,0011725**  | **897,8**  | **2,4245**  | **0,0011719**  | **898,0**  | **2,4237**  | **0,0011714**  | **898,1**  | **2,4228**  |
| 220  | 0,1406  | 2849,2  | 6,5639  | 0,1021  | 2820,4  | 6,3842  | **0,0011897**  | **943,7**  | **2,5175**  | **0,0011891**  | **943,9**  | **2,5166**  |
| 230  | 0,1445  | 2874,7  | 6,6150  | 0,1053  | 2849,0  | 6,4416  | 0,08164  | 2820,4  | 6,2927  | **0,0012084**  | **990,3**  | **2,6098**  |
| 240  | 0,1483  | 2899,3  | 6,6635  | 0,1084  | 2876,3  | 6,4953  | 0,08439  | 2851,0  | 6,3529  | 0,06818  | 2823,0  | 6,2245  |
| 280  | 0,1627  | 2993,0  | 6,8394  | 0,1200  | 2976,9  | 6,6842  | 0,09434  | 2959,8  | 6,5573  | 0,07714  | 2941,8  | 6,4477  |
| 320  | 0,1765  | 3082,1  | 6,9949  | 0,1308  | 3069,8  | 6,8466  | 0,10334  | 3057,1  | 6,7273  | 0,08500  | 3044,0  | 6,6262  |
| 360  | 0,1899  | 3169,3  | 71372  | 0,1411  | 3159,5  | 6,9929  | 0,1119  | 3149,6  | 6,8781  | 0,09232  | 3139,3  | 6,7818  |
| 400  | 0.2030  | 3256,1  | 7,2701  | 0,1512  | 3248,1  | 7,1285  | 0,1201  | 3239,9  | 7,0165  | 0,09933  | 3231,6  | 6,9231  |
| 440  | 0,2159  | 3342,6  | 7,3949  | 0,1610  | 3335,8  | 7,2550  | 0,1281  | 3328,9  | 7,1449  | 0,1061  | 3321,9  | 7,0535  |
| 480  | 02287  | 3429,3  | 7,5132  | 0,1708  | 3423,5  | 7,3747  | 0,1360  | 3417,5  | 7,2659  | 0,1128  | 3411,6  | 7,1758  |
| 500  | 0,2351  | 3472,9  | 7,5703  | 0,1756  | 3467,4  | 7,4323  | 0,1399  | 3461,9  | 7,3240  | 0,1161  | 3456,4  | 7,2345  |
| 510  | 0,2383  | 3494,7  | 7,5984  | 0,1780  | 3489,5  | 7,4606  | 0,1419  | 3484,1  | 7,3526  | 0,1178  | 3478,8  | 7,2633  |
| 520  | 0,2414  | 3516,6  | 7,6262  | 0,1804  | 3511,5  | 7,4886  | 0,1438  | 3506,4  | 7,3808  | 0,1194  | 3501,2  | 7,2918  |
| 560  | 0,2541  | 3604,6  | 7,7345  | 0,1900  | 3600,2  | 7,5977  | 0,1516  | 3595,7  | 7,4906  | 0,1259  | 3591,1  | 7,4024  |
| 600  | 0,2667  | 3693,5  | 7,8386  | 0,1995  | 3689,5  | 7,7024  | 0,1592  | 3685,5  | 7,5960  | 0,1324  | 3681,5  | 7,5084  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 35,0 бар | p = 40,0 бар  | p = 45,0 бар  | p = 50,0 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0  | **0,0009985**  | **3,5**  | **0,0001**  | **0,0009982**  | **4,0**  | **0,0002**  | **0,0009980**  | **4,5**  | **0,0002**  | **0,0009977**  | **5,1**  | **0,0002**  |
| 10  | **0,0009986**  | **45,4**  | **0,1507**  | **0,0009984**  | **45,9**  | **0,1506**  | **0,0009981**  | **46,4**  | **0,1506**  | **0,0009979**  | **46,9**  | **0,1505**  |
| 40  | **0,0010063**  | **170,5**  | **0,5708**  | **0,0010060**  | **171,0**  | **0,5706**  | **0,0010058**  | **171,4**  | **0,5704**  | **0,0010056**  | **171,9**  | **0,5702**  |
| 80  | **0,0010275**  | **337,7**  | **1,0730**  | **0,0010273**  | **338,1**  | **1,0726**  | **0,0010270**  | **338,4**  | **1,0723**  | **0,0010268**  | **338,8**  | **1,0720"**  |
| 120  | **0,0010587**  | **506,0**  | **1,5244**  | **0,0010584**  | **506,4**  | **1,5242**  | **0,0010582**  | **506,7**  | **1,5237**  | **0,0010579**  | **507,1**  | **1,5232**  |
| 160  | **0,0011001**  | **677,2**  | **1,9390**  | **0,0010997**  | **677,5**  | **1,9385**  | **0,0010993**  | **677,8**  | **1,9379**  | **0,0010990**  | **678,0**  | **1,9373**  |
| 200  | **0,0011545**  | **853,2**  | **2,3276**  | **0,0011540**  | **853,4**  | **2,3268**  | **0,0011534**  | **853,6**  | **2,3260**  | **0,0011530**  | **853,8**  | **2,3253**  |
| 240  | **0,0012288**  | **1037,7**  | **2,7018**  | **0,0012280**  | **1037,7**  | **2,7007**  | **0,0012272**  | **1037,8**  | **2,6996**  | **0,0012264**  | **1037,8**  | **2,6985**  |
| 250  | 0,05871  | 2828,1  | 6,1734  | **0,0012512**  | **1085,8**  | **2,7936**  | **0,0012503**  | **1085,8**  | **2,7923**  | **0,0012494**  | **1085,8**  | **2,7911**  |
| 260  | 0,06085  | 2861,6  | 6,2369  | 0,5174  | 2835,6  | 6,1355  | 0,04454  | 2807,1  | 6,0370  | **0,0012750**  | **1135,0**  | **2,8842**  |
| 270  | 0,06287  | 2892,9  | 6,2951  | 0,05366  | 2870,1  | 6,1995  | 0,04641  | 2845,3  | 6,1080  | 0,04053  | 2818,4  | 6,0184  |
| 320  | 0,07187  | 3030,3  | 6,5374  | 0,06200  | 3016,2  | 6,4573  | 0,05430  | 3001,5  | 6,3836  | 0,04811  | 2986,2  | 6,3147  |
| 360  | 0,07836  | 3128,9  | 6,6982  | 0,06787  | 3118,2  | 6,6237  | 0,05971  | 3107,2  | 6,5561  | 0,05316  | 3095,9  | 6,4939  |
| 400 440  | 0,08451 0,09046  | 3223,1 3314,8  | 6,8426 6,9749  | 0,07339 0,07869  | 3214,5 3307,7  | 6,7713 6,9058  | 0,06473 0,06953  | 3205,8 3300,5  | 6,7071 6,8438  | 0,05780 0,06220  | 3196,9 3293,2  | 6,6486 6,7875  |
| 460  | 0,09338  | 3360,3  | 7,0378  | 0,08128  | 3353,7  | 6,9694  | 0,07187  | 3347,1  | 6,9083  | 0,06434  | 3340,4  | 6,8528  |
| 520  | 0,10198  | 3496,0  | 7,2157  | 0,08890  | 3490,8  | 7,1491  | 0,07872  | 3485,5  | 7,0898  | 0,07058  | 3480,2  | 7,0361  |
| 560  | 0,1076  | 3586,6  | 7,3272  | 0,09387  | 3582,0  | 7,2614  | 0,08319  | 3577,4  | 7,2029  | 0,07464  | 3572,8  | 7,1501  |
| 600  | 0,1132  | 3677,5  | 7,4337  | 0,09879  | 3673,4  | 7,3686  | 0,08760  | 3669,4  | 7,3107  | 0,07864  | 3665,4  | 7,2586  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 60,0 бар | p = 70,0 бар  | p = 80,0 бар  | p = 90,0 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0  | **0,0009972**  | **6,1**  | **0,0003**  | **0,0009967**  | **7,1**  | **0,0004**  | **0,0009962**  | **8,1**  | **0,0004**  | **0,0009958**  | **9,1**  | **0,0005**  |
| 40  | **0,0010051**  | **172,7**  | **0,5698**  | **0,0010047**  | **173,6**  | **0,5694**  | **0,0010043**  | **174,5**  | **0,5690**  | **0,0010038**  | **175,4**  | **0,5686**  |
| 120  | **0,0010573**  | **507,8**  | **1,5224**  | **0,0010567**  | **508,5**  | **1,5215**  | **0,0010562**  | **509,2**  | **1,5206**  | **0,0010556**  | **509,9**  | **1,5197**  |
| 160  | **0,0010983**  | **6-78,6**  | **1,9361**  | **0,0010976**  | **679,2**  | **1,9350**  | **0,0010968**  | **679,8**  | **1,9338**  | **0,0010961**  | **680,4**  | **1,9326**  |
| 200  | **0,0011519**  | **854,2**  | **2,3237**  | **0,0011510**  | **854,6**  | **2,3222**  | **0,0011500**  | **855,1**  | **2,3207**  | **0,0011490**  | **855,5**  | **2,3191**  |
| 240  | **0,0012249**  | **1037,9**  | **2,6963**  | **0,0012233**  | **1038,0**  | **2,6941**  | **0,0012218**  | **1038,2**  | **2,6920**  | **0,0012202**  | **1038,3**  | **2,6899**  |
| 270  | **0,0013013**  | **1185,2**  | **2,9751**  | **0,0012988**  | **1184,9**  | **2,9721**  | **0,0012964**  | **1184,6**  | **2,9691**  | **0,0012940**  | **1184,3**  | **2,9663**  |
| 280  | 0,03317  | 2804,0  | 5,9253  | **0,0013307**  | **1236,7**  | **3,0667**  | **0,0013277**  | **1236,2**  | **3,0633**  | **0,0013249**  | **1235,6**  | **3,0600**  |
| 290  | 0,03473  | 2846,5  | 6,0016  | 0,02801  | 2792,9  | 5,8509  | **0,0013639**  | **1289,8**  | **3,1594**  | **0,0013604**  | **1289,0**  | **3,1555**  |
| 300  | 0,03616  | 2885,0  | 6,0693  | 0,02946  | 2839,2  | 5,9322  | 0,02425  | 2785,4  | 5,7918  | **0,0014022**  | **1344,9**  | **3,2539**  |
| 310  | 0,03750  | 2920,4  | 6,1306  | 0,03078  | 2880,2  | 6,0034  | 0,02560  | 2834,7  | 5,8771  | 0,02142  | 2781,8  | 5,746»  |
| 320  | 0,03876  | 2953,5  | 6,1869  | 0,03199  | 2917,8  | 6,0672  | 0,02682  | 2878,1  | 5,9510  | 0,02268  | 2833,5  | 5,8341  |
| 360  | 0,04331  | 3072,4  | 6,3811  | 0,03623  | 3047,6  | 6,2793  | 0,03089  | 3021,3  | 6,1849  | 0,02669  | 2993,2  | 6,0953  |
| 400  | 0,04738  | 3178,6  | 6,5438  | 0,03992  | 3159,7  | 6,4511  | 0,03431  | 3140,1  | 6,3670  | 0,02993  | 3119,7  | 6,2891  |
| 440  | 0,05119  | 3278,3  | 6,6876  | 0,04332  | 3263,0  | 6,6002  | 0,03741  | 3247,3  | 6,5218  | 0,03280  | 3231,2  | 6,4502  |
| 480  | 0,05484  | 3374,7  | 6,8191  | 0,04654  | 3361,9  | 6,7352  | 0,04031  | 3349,0  | 6,6605  | 0,03546  | 3335,7  | 6,5927  |
| 520  | 0,05837  | 3469,5  | 6,9417  | 0,04964  | 3458,6  | 6,8602  | 0,04309  | 3447,6  | 6,7881  | 0,03800  | 3436,4  | 6,7230  |
| 560  | 0,06182  | 3563,5  | 7,0575  | 0,05266  | 3554,1  | 6,9778  | 0,04578  | 3544,6  | 6,9075  | 0,04044  | 3535,0  | 6,8444  |
| 600  | 0,06521  | 3657,2  | 7,1673  | 0,05561  | 3649,0  | 7,0890  | 0,04841  | 3640,7  | 7,0201  | 0,04281  | 3632,4  | 6,9585  |

Продолжение табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 100,0 бар | p = 110,0 бар  | p = 120,0 бар  | p = 130,0 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0 40  | **0,0009953** **0,0010034**  | **10,1** **176,3**  | **0,0005** **0,5682**  | **0,0009948** **0,0010030**  | **11,1** **177,2**  | **0,0006** **0,5678**  | **0,0009943** **0,0010026**  | **12,1** **178,1**  | **0,0006** **0,5674**  | **0,0009938** **0,0010021**  | **13,1** **178,9**  | **0,0006** **0,5670**  |
| 100 140  | **0,0010386** **0,0010739**  | **426,5** **595,4**  | **1,2992** **1,7291**  | **0,0010381** **0,0010733**  | **427,2** **596,1**  | **1,2984** **1,7281**  | **0,0010376** **0,0010727**  | **428,0** **596,7**  | **1,2977** **1,7271**  | **0,0010371** **0,0010721**  | **428,8** **597,4**  | **1,2969** **1,7261**  |
| 200 240  | **0,0011480** **0,0012188**  | **855,9** **1038**  | **2,3176** **2,6878**  | **0,0011470** **0,0012173**  | **856,4** **1038,6**  | **2,3161** **2,6857**  | **0,0011461** **0,0012158**  | **856,8** **1038,8**  | **2,315** **2,684**  | **0,0011451** **0,0012144**  | **857,2** **1038,9**  | **2,313** **2,682**  |
| 290  | **0,0013570**  | **1288**  | **3,1517**  | **0,0013536**  | **1287,5**  | **3,1480**  | **0,0013504**  | **1286,8**  | **3,144**  | **0,0013472**  | **1286,1**  | **3,141**  |
| 310  | **0,0014472**  | **1402,6**  | **3,3513**  | **0,0014416**  | **1400,9**  | **3,3459**  | **0,0014362**  | **1399,3**  | **3,3407**  | **0,0014310**  | **1397,8**  | **3,3356**  |
| 320  | 0,01924  | 2782,0  | 5,7120  | 0,01625  | 2720,3  | 5,5782  | **0,0014941**  | **1461,5**  | **3,4464**  | **0,0014869**  | **1459,2**  | **3,4400**  |
| 330  | 0,02042  | 2835,4  | 5,8014  | 0,01754  | 2785,9  | 5,6880  | 0,01501  | 2727,6  | 5,5643  | **0,0015600**  | **1526,9**  | **3,5532**  |
| 340  | 0,02147  | 2882,1  | 5,8782  | 0,01864  | 2840,4  | 5,7776  | 0,01620  | 2793,4  | 5,6725  | 0,01402  | 2738,8  | 5,5589  |
| 390  | 0,02568  | 3067,1  | 6,1689  | 0,02281  | 3043,2  | 6,0963  | 0,02040  | 3018,1  | 6,0259  | 0,01834  | 2991,7  | 5,9569  |
| 440  | 0,02910  | 3214,8  | 6,3837  | 0,02607  | 3197,8  | 6,3214  | 0,02354  | 3180,4  | 6,2622  | 0,02139  | 3162,6  | 6,2057  |
| 460  | 0,03036  | 3269,3  | 6,4591  | 0,02726  | 3254,1  | 6,3992  | 0,02467  | 3238,6  | 6,3427  | 0,02247  | 3222,8  | 6,2890  |
| 520  | 0,03392  | 3425,1  | 6,6635  | 0,03058  | 3413,7  | 6,6085  | 0,02780  | 3402,1  | 6,5571  | 0,02544  | 3390,3  | 6,5088  |
| 560  | 0,03616  | 3525,4  | 6,7869  | 0,03266  | 3515,6  | 6,7340  | 0,02974  | 3505,7  | 6,6847  | 0,02727  | 3495,8  | 6,6386  |
| 600  | 0,0383  | 3624,0  | 6,9025  | 0,0347  | 3615,5  | 6,8511  | 0,0316  | 3607,0  | 6,8034  | 0,0290  | 3598,4  | 6,7590  |

окончание табл.П5-3

|  |  |  |  |
| --- | --- | --- | --- |
| p = 140,0 бар | p = 150,0 бар  | p = 160,0 бар  | p = 170,0 бар  |
| *t*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  | *v*  | *h*  | *s*  |
| С  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  | м3/кг  | кДж/кг  | кДж/ (кг·К)  |
| 0  | **0,0009933**  | **14,1**  | **0,0007**  | **0,0009928**  | **15,1**  | **0,0007**  | **0,0009924**  | **16,1**  | **0,0008**  | **0,0009919**  | **17,1**  | **0,0008**  |
| 20  | **0,0009955**  | **97,0**  | **0,2933**  | **0,0009950**  | **97,9**  | **0,2930**  | **0,0009946**  | **98,8**  | **0,2928**  | **0,0009942**  | **99,7**  | **0,2926**  |
| 40  | **0,0010017**  | **179,8**  | **0,5666**  | **0,0010013**  | **180,7**  | **0,5662**  | **0,0010008**  | **181,6**  | **0,5659**  | **0,0010004**  | **182,4**  | **0,5655**  |
| 80  | **0,0010226**  | **346,0**  | **1,0661**  | **0,001021**  | **346,8**  | **1,0655**  | **0,0010217**  | **347,6**  | **1,0648**  | **0,0010212**  | **348,4**  | **1,0642**  |
| 120  | **0,0010529**  | **513,5**  | **1,5153**  | **0,0010523**  | **514,2**  | **1,5144**  | **0,0010518**  | **514,9**  | **1,5136**  | **0,0010512**  | **515,6**  | **1,5127**  |
| 200  | **0,0011442**  | **857,7**  | **2,3117**  | **0,0011432**  | **858,1**  | **2,3102**  | **0,0011423**  | **858,6**  | **2,3087**  | **0,0011414**  | **859,0**  | **2,3073**  |
| 240  | **0,0012129**  | **1039,1**  | **2,6796**  | **0,0012115**  | **1039,3**  | **2,6776**  | **0,0012101**  | **1039,5**  | **2,6756**  | **0,0012088**  | **1039,7**  | **2,6736**  |
| 280  | **0,0013115**  | **1233,5**  | **3,0441**  | **0,0013090**  | **1233,1**  | **3,0411**  | **0,0013065**  | **1232,8**  | **3,0381**  | **0,0013041**  | **1232,4**  | **3,0352**  |
| 320  | **0,0014801**  | **1457,0**  | **3,4338**  | **0,0014736**  | **1455,0**  | **3,4279**  | **0,0014674**  | **1453,0**  | **3,4222**  | **0,0014615**  | **1451,2**  | **3,4166**  |
| 330  | **0,0015497**  | **1523,5**  | **3,5449**  | **0,0015402**  | **1520,3**  | **3,5371**  | **0,0015312**  | **1517,3**  | **3,5296**  | **0,0015229**  | **1514,6**  | **35225**  |
| 340  | 0,01201  | 2672,6  | 5,4297  | **0,0016323**  | **1594,6**  | **3,6592**  | **0,0016175**  | **1589,6**  | **3,6484**  | **0,0016042**  | **1585,9**  | **3,6384**  |
| 350  | 0,01323  | 2753,5  | 5,5606  | 0,01148  | 2693,8  | 5,4450  | 0,009782  | 2618,5  | 5,3071  | **0,001728**  | **1668,7**  | **3,7736**  |
| 360  | 0,01422  | 2817,4  | 5,6624  | 0,01258  | 2771,3  | 5,5685  | 0,01107  | 2717,8  | 5,4653  | 0,009616  | 2653,6  | 5,3475  |
| 400  | 0,01722  | 3004,0  | 5,9488  | 0,01566  | 2977,6  | 5,8851  | 0,01427  | 2949,7  | 5,8215  | 0,01303  | 2920,2  | 5,7575  |
| 440  | 0,01954  | 3144,2  | 6,1512  | 0,01794  | 3125,2  | 6,0984  | 0,01652  | 3105,8  | 6,0470  | 0,01527  | 3085,7  | 5,9966  |
| 480  | 0,02157  | 3265,9  | 6,3174  | 0,01989  | 3251,2  | 6,2704  | 0,01842  | 3236,2  | 6,2250  | 0,01712  | 3220,8  | 6,1811  |
| 520  | 0,02342  | 3378,4  | 6,4630  | 0,02166  | 3366,4  | 6,4194  | 0,02013  | 3354,2  | 6,3777  | 0,01877  | 3341,8  | 6,3376  |
| 560  | 0,02515  | 3485,8  | 6,5951  | 0,02332  | 3475,6  | 6,5539  | 0,02171  | 3465,4  | 6,5146  | 0,02029  | 3455,1  | 6,4770  |
| 600  | 0,02681  | 3589,8  | 6,7172  | 0,02489  | 3581,2  | 6,6776  | 0,02321  | 3572,4  | 6,6401  | 0,02173  | 3563,6  | 6,6043  |