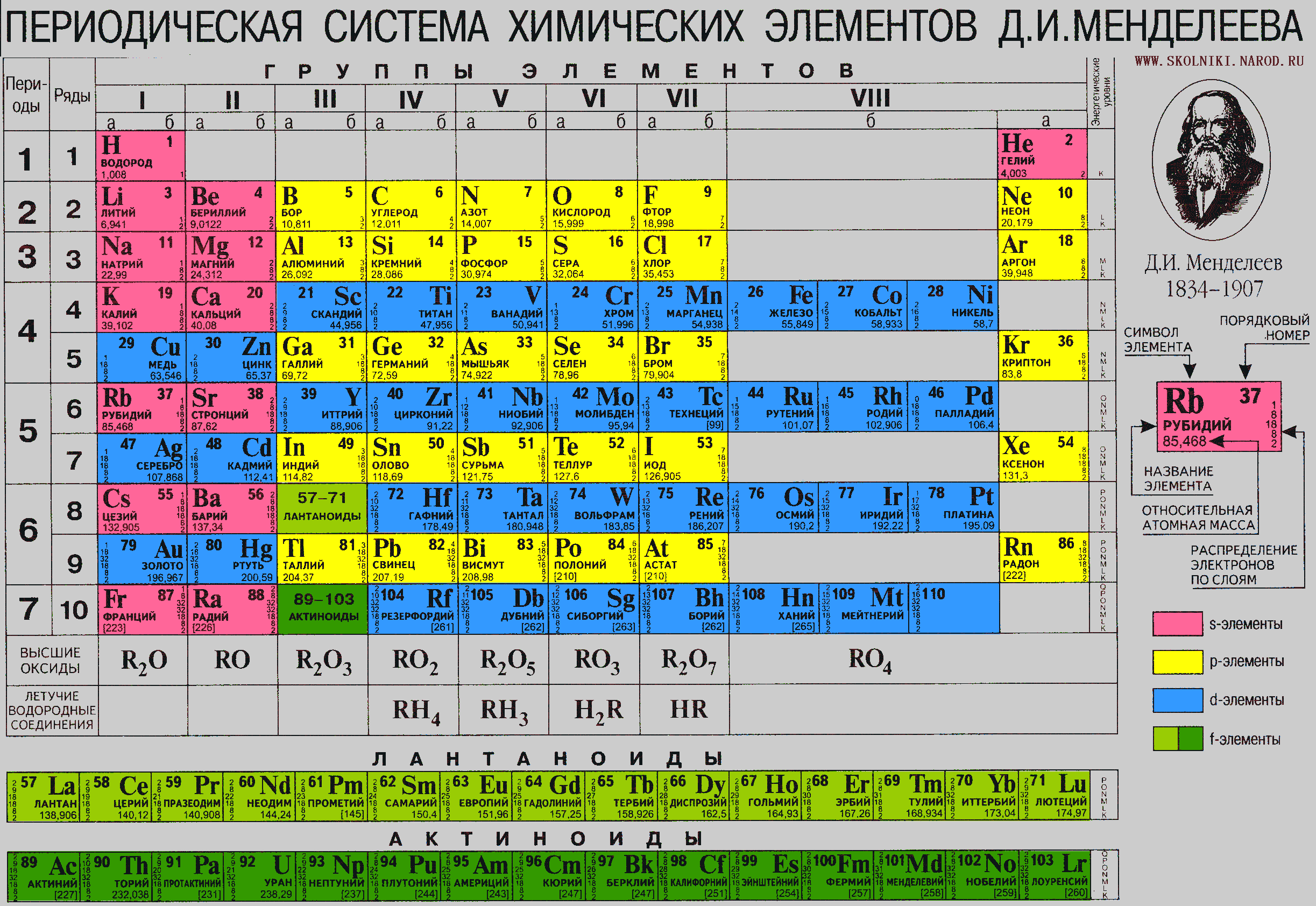
**Приложение П2**

**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 |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 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 |