中华人民共和国国家标准

UDC 531.78.081
(083.4)

GB 4112—83

千克力与牛顿的相互换算表

Kilogram-force and newton conversion tables

1 引言

1.1 本标准适用于所有千克力（kgf）换算成牛顿（N）和牛顿换算成千克力的场合。

本标准的换算表仅限于一般需要的换算，换算表中换算后的数字均按GB 1.1—81《标准化工作导则 编写标准的一般规定》的规定修约至五位有效数字，1以下的数字修约至小数点后四位。必要时按1.2给出的换算系数进行计算和修约。修约规则按GB 1.1—81的规定（见GB 4116—83《奥斯特与安培每米的相互换算表》附录A）。

1.2 换算系数：

$$1\ \text{kgf}=9.806\ 65\text{N}$$

$$1\ \text{N}=1/9.806\ 65\text{kgf}$$

2 换算表

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表1　千克力至牛顿的换算表

1 kgf=9.806 65 N

kgf / N / kgf	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.0000	0.9807	1.9613	2.9420	3.9277	4.9033	5.8840	6.8647	7.8453	8.8260
1	9.8067	10.787	11.768	12.749	13.729	14.710	15.691	16.671	17.652	18.633
2	19.613	20.594	21.575	22.555	23.536	24.517	25.497	26.478	27.459	28.439
3	29.420	30.401	31.381	32.362	33.343	34.323	35.304	36.285	37.265	38.246
4	39.227	40.207	41.188	42.169	43.149	44.130	45.111	46.091	47.072	48.053
5	49.033	50.014	50.995	51.975	52.956	53.937	54.917	55.898	56.879	57.859
6	58.840	59.821	60.801	61.782	62.763	63.743	64.724	65.705	66.685	67.666
7	68.647	69.627	70.608	71.589	72.569	73.550	74.531	75.511	76.492	77.473
8	78.453	79.434	80.415	81.395	82.376	83.357	84.337	85.318	86.299	87.279
9	88.260	89.241	90.221	91.202	92.183	93.163	94.144	95.125	96.105	97.086
10	98.067	99.047	100.03	101.01	101.99	102.97	103.95	104.93	105.91	106.89
11	107.87	108.85	109.83	110.82	111.80	112.78	113.76	114.74	115.72	116.70
12	117.68	118.66	119.64	120.62	121.60	122.58	123.56	124.54	125.53	126.51
13	127.49	128.47	129.45	130.43	131.41	132.39	133.37	134.35	135.33	136.31
14	137.29	138.27	139.25	140.24	141.22	142.20	143.18	144.16	145.14	146.12
15	147.10	148.08	149.06	150.04	151.02	152.00	152.98	153.96	154.95	155.93
16	156.91	157.89	158.87	159.85	160.83	161.81	162.79	163.77	164.75	165.73
17	166.71	167.69	168.67	169.66	170.64	171.62	172.60	173.58	174.56	175.54
18	176.52	177.50	178.48	179.46	180.44	181.42	182.40	183.38	184.37	185.35
19	186.33	187.31	188.29	189.27	190.25	191.23	192.21	193.19	194.17	195.15
20	196.13	197.11	198.09	199.07	200.06	201.04	202.02	203.00	203.98	204.96
21	205.94	206.92	207.90	208.88	209.86	210.84	211.82	212.80	213.78	214.77
22	215.75	216.73	217.71	218.69	219.67	220.65	221.63	222.61	223.59	224.57
23	225.55	226.53	227.51	228.49	229.48	230.46	231.44	232.42	233.40	234.38
24	235.36	236.34	237.32	238.30	239.28	240.26	241.24	242.22	243.20	244.19
25	245.17	246.15	247.13	248.11	249.09	250.07	251.05	252.03	253.01	253.99
26	254.97	255.95	256.93	257.91	258.90	259.88	260.86	261.84	262.82	263.80
27	264.78	265.76	266.74	267.72	268.70	269.68	270.66	271.64	272.62	273.61
28	274.59	275.57	276.55	277.53	278.51	279.49	280.47	281.45	282.43	283.41
29	284.39	285.37	286.35	287.33	288.32	289.30	290.28	291.26	292.24	293.22
30	294.20	295.18	296.16	297.14	298.12	299.10	300.08	301.06	302.04	303.03
31	304.01	304.99	305.97	306.95	307.93	308.91	309.89	310.87	311.85	312.83
32	313.81	314.79	315.77	316.75	317.74	318.72	319.70	320.68	321.66	322.64
33	323.62	324.60	325.58	326.56	327.54	328.52	329.50	330.48	331.46	332.45
34	333.43	334.41	335.39	336.37	337.35	338.33	339.31	340.29	341.27	342.25
35	343.23	344.21	345.19	346.17	347.16	348.14	349.12	350.10	351.08	352.06
36	353.04	354.02	355.00	355.98	356.96	357.94	358.92	359.90	360.88	361.87
37	362.85	363.83	364.81	365.79	366.77	367.75	368.73	369.71	370.69	371.67
38	372.65	373.63	374.61	375.59	376.58	377.56	378.54	379.52	380.50	381.48
39	382.46	383.44	384.42	385.40	386.38	387.36	388.34	389.32	390.30	391.29
40	392.27	393.25	394.23	395.21	396.19	397.17	398.15	399.13	400.11	401.09
41	402.07	403.05	404.03	405.01	406.00	406.98	407.96	408.94	409.92	410.90
42	411.88	412.86	413.84	414.82	415.80	416.78	417.76	418.74	419.72	420.71
43	421.69	422.67	423.65	424.63	425.61	426.59	427.57	428.55	429.53	430.51
44	431.49	432.47	433.45	434.43	435.42	436.40	437.38	438.36	439.34	440.32
45	441.30	442.28	443.26	444.24	445.22	446.20	447.18	448.16	449.14	450.13
46	451.11	452.09	453.07	454.05	455.03	456.01	456.99	457.97	458.95	459.93
47	460.91	461.89	462.87	463.85	464.84	465.82	466.80	467.78	468.76	469.74
48	470.72	471.70	472.68	473.66	474.64	475.62	476.60	477.58	478.56	479.55
49	480.53	481.51	482.49	483.47	484.45	485.43	486.41	487.39	488.37	489.35

续表 1

kgf / N / kgf	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
50	490.33	491.31	492.29	493.27	494.26	495.24	496.22	497.20	498.18	499.16
51	500.14	501.12	502.10	503.08	504.06	505.04	506.02	507.00	507.98	508.97
52	509.95	510.93	511.91	512.89	513.87	514.85	515.83	516.81	517.79	518.77
53	519.75	520.73	521.71	522.69	523.68	524.66	525.64	526.62	527.60	528.58
54	529.56	530.54	531.52	532.50	533.48	534.46	535.44	536.42	537.40	538.39
55	539.37	540.35	541.33	542.31	543.29	544.27	545.25	546.23	547.21	548.19
56	549.17	550.15	551.13	552.11	553.10	554.08	555.06	556.04	557.02	558.00
57	558.98	559.96	560.94	561.92	562.90	563.88	564.86	565.84	566.82	567.81
58	568.79	569.77	570.75	571.73	572.71	573.69	574.67	575.65	576.63	577.61
59	578.59	579.57	580.55	581.53	582.52	583.50	584.48	585.46	586.44	587.42
60	588.40	589.38	590.36	591.34	592.32	593.30	594.28	595.26	596.24	597.22
61	598.21	599.19	600.17	601.15	602.13	603.11	604.09	605.07	606.05	607.03
62	608.01	608.99	609.97	610.95	611.93	612.92	613.90	614.88	615.86	616.84
63	617.82	618.80	619.78	620.76	621.74	622.72	623.70	624.68	625.66	626.64
64	627.63	628.61	629.59	630.57	631.55	632.53	633.51	634.49	635.47	636.45
65	637.43	638.41	639.39	640.37	641.35	642.34	643.32	644.30	645.28	646.26
66	647.24	648.22	649.20	650.18	651.16	652.14	653.12	654.10	655.08	656.06
67	657.05	658.03	659.01	659.99	660.97	661.95	662.93	663.91	664.89	665.87
68	666.85	667.83	668.81	669.79	670.77	671.76	672.74	673.72	674.70	675.68
69	676.66	677.64	678.62	679.60	680.58	681.56	682.54	683.52	684.50	685.48
70	686.47	687.45	688.43	689.41	690.39	691.37	692.35	693.33	694.31	695.29
71	696.27	697.25	698.23	699.21	700.19	701.18	702.16	703.14	704.12	705.10
72	706.08	707.06	708.04	709.02	710.00	710.98	711.96	712.94	713.92	714.90
73	715.89	716.87	717.85	718.83	719.81	720.79	721.77	722.75	723.73	724.71
74	725.69	726.67	727.65	728.63	729.61	730.60	731.58	732.56	733.54	734.52
75	735.50	736.48	737.46	738.44	739.42	740.40	741.38	742.36	743.34	744.32
76	745.31	746.29	747.27	748.25	749.23	750.21	751.19	752.17	753.15	754.13
77	755.11	756.09	757.07	758.05	759.03	760.02	761.00	761.98	762.96	763.94
78	764.92	765.90	766.88	767.86	768.84	769.82	770.80	771.78	772.76	773.74
79	774.73	775.71	776.69	777.67	778.65	779.63	780.61	781.59	782.57	783.55
80	784.53	785.51	786.49	787.47	788.45	789.44	790.42	791.40	792.38	793.36
81	794.34	795.32	796.30	797.28	798.26	799.24	800.22	801.20	802.18	803.16
82	804.15	805.13	806.11	807.09	808.07	809.05	810.03	811.01	811.99	812.97
83	813.95	814.93	815.91	816.89	817.87	818.86	819.84	820.82	821.80	822.78
84	823.76	824.74	825.72	826.70	827.68	828.66	829.64	830.62	831.60	832.58
85	833.57	834.55	835.53	836.51	837.49	838.47	839.45	840.43	841.41	842.39
86	843.37	844.35	845.33	846.31	847.29	848.28	849.26	850.24	851.22	852.20
87	853.18	854.16	855.14	856.12	857.10	858.08	859.06	860.04	861.02	862.00
88	862.99	863.97	864.95	865.93	866.91	867.89	868.87	869.85	870.83	871.81
89	872.79	873.77	874.75	875.73	876.71	877.70	878.68	879.66	880.64	881.62
90	882.60	883.58	884.56	885.54	886.52	887.50	888.48	889.46	890.44	891.42
91	892.41	893.39	894.37	895.35	896.33	897.31	898.29	899.27	900.25	901.23
92	902.21	903.19	904.17	905.15	906.13	907.12	908.10	909.08	910.06	911.04
93	912.02	913.00	913.98	914.96	915.94	916.92	917.90	918.88	919.86	920.84
94	921.83	922.81	923.79	924.77	925.75	926.73	927.71	928.69	929.67	930.65
95	931.63	932.61	933.59	934.57	935.55	936.54	937.52	938.50	939.48	940.46
96	941.44	942.42	943.40	944.38	945.36	946.34	947.32	948.30	949.28	950.26
97	951.25	952.23	953.21	954.19	955.17	956.15	957.13	958.11	959.09	960.07
98	961.05	962.03	963.01	963.99	964.97	965.96	966.94	967.92	968.90	969.88
99	970.86	971.84	972.82	973.80	974.78	975.76	976.74	977.72	978.70	979.68
100	980.67	981.65	982.63	983.61	984.59	985.57	986.55	987.53	988.51	989.49

表 2　牛顿至千克力的换算表

1 N＝1/9.806 65kgf

N / kgf	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
0	0.0000	0.0102	0.0204	0.0306	0.0408	0.0510	0.0612	0.0714	0.0816	0.0918
1	0.1020	0.1122	0.1224	0.1326	0.1428	0.1530	0.1632	0.1734	0.1835	0.1937
2	0.2039	0.2141	0.2243	0.2345	0.2447	0.2549	0.2651	0.2753	0.2855	0.2957
3	0.3059	0.3161	0.3263	0.3365	0.3467	0.3569	0.3671	0.3773	0.3875	0.3977
4	0.4079	0.4181	0.4283	0.4385	0.4487	0.4589	0.4691	0.4793	0.4895	0.4997
5	0.5099	0.5201	0.5303	0.5404	0.5506	0.5608	0.5710	0.5812	0.5914	0.6016
6	0.6118	0.6220	0.6322	0.6424	0.6526	0.6628	0.6730	0.6832	0.6934	0.7036
7	0.7138	0.7240	0.7342	0.7444	0.7546	0.7648	0.7750	0.7852	0.7954	0.8056
8	0.8158	0.8260	0.8362	0.8464	0.8566	0.8668	0.8770	0.8872	0.8974	0.9075
9	0.9177	0.9279	0.9381	0.9483	0.9585	0.9687	0.9789	0.9891	0.9993	1.0095
10	1.0197	1.0299	1.0401	1.0503	1.0605	1.0707	1.0809	1.0911	1.1013	1.1115
11	1.1217	1.1319	1.1421	1.1523	1.1625	1.1727	1.1829	1.1931	1.2033	1.2135
12	1.2237	1.2339	1.2441	1.2543	1.2644	1.2746	1.2848	1.2950	1.3052	1.3154
13	1.3256	1.3358	1.3460	1.3562	1.3664	1.3766	1.3868	1.3970	1.4072	1.4174
14	1.4276	1.4378	1.4480	1.4582	1.4684	1.4786	1.4888	1.4990	1.5092	1.5194
15	1.5296	1.5398	1.5500	1.5602	1.5704	1.5806	1.5908	1.6010	1.6112	1.6213
16	1.6315	1.6417	1.6519	1.6621	1.6723	1.6825	1.6927	1.7029	1.7131	1.7233
17	1.7335	1.7437	1.7539	1.7641	1.7743	1.7845	1.7947	1.8049	1.8151	1.8253
18	1.8355	1.8457	1.8559	1.8661	1.8763	1.8865	1.8967	1.9069	1.9171	1.9273
19	1.9375	1.9477	1.9579	1.9681	1.9782	1.9884	1.9986	2.0088	2.0190	2.0292
20	2.0394	2.0496	2.0598	2.0700	2.0802	2.0904	2.1006	2.1108	2.1210	2.1312
21	2.1414	2.1516	2.1618	2.1720	2.1822	2.1924	2.2026	2.2128	2.2230	2.2332
22	2.2434	2.2536	2.2638	2.2740	2.2842	2.2944	2.3046	2.3148	2.3250	2.3352
23	2.3453	2.3555	2.3657	2.3759	2.3861	2.3963	2.4065	2.4167	2.4269	2.4371
24	2.4473	2.4575	2.4677	2.4779	2.4881	2.4983	2.5085	2.5187	2.5289	2.5391
25	2.5493	2.5595	2.5697	2.5799	2.5901	2.6003	2.6105	2.6207	2.6309	2.6411
26	2.6513	2.6615	2.6717	2.6819	2.6921	2.7022	2.7124	2.7226	2.7328	2.7430
27	2.7532	2.7634	2.7736	2.7838	2.7940	2.8042	2.8144	2.8246	2.8348	2.8450
28	2.8552	2.8654	2.8756	2.8858	2.8960	2.9062	2.9164	2.9266	2.9368	2.9470
29	2.9572	2.9674	2.9776	2.9878	2.9980	3.0082	3.0184	3.0286	3.0388	3.0490
30	3.0591	3.0693	3.0795	3.0897	3.0999	3.1101	3.1203	3.1305	3.1407	3.1509
31	3.1611	3.1713	3.1815	3.1917	3.2019	3.2121	3.2223	3.2325	3.2427	3.2529
32	3.2631	3.2733	3.2835	3.2937	3.3039	3.3141	3.3243	3.3345	3.3447	3.3549
33	3.3651	3.3753	3.3855	3.3957	3.4059	3.4160	3.4262	3.4364	3.4466	3.4568
34	3.4670	3.4772	3.4874	3.4976	3.5078	3.5180	3.5282	3.5384	3.5486	3.5588
35	3.5690	3.5792	3.5894	3.5996	3.6098	3.6200	3.6302	3.6404	3.6506	3.6608
36	3.6710	3.6812	3.6914	3.7016	3.7118	3.7220	3.7322	3.7424	3.7526	3.7628
37	3.7729	3.7831	3.7933	3.8035	3.8137	3.8239	3.8341	3.8443	3.8545	3.8647
38	3.8749	3.8851	3.8953	3.9055	3.9157	3.9259	3.9361	3.9463	3.9565	3.9667
39	3.9769	3.9871	3.9973	4.0075	4.0177	4.0279	4.0381	4.0483	4.0585	4.0687
40	4.0789	4.0891	4.0993	4.1095	4.1197	4.1299	4.1400	4.1502	4.1604	4.1706
41	4.1808	4.1910	4.2012	4.2114	4.2216	4.2318	4.2420	4.2522	4.2624	4.2726
42	4.2828	4.2930	4.3032	4.3134	4.3236	4.3338	4.3440	4.3542	4.3644	4.3746
43	4.3848	4.3950	4.4052	4.4154	4.4256	4.4358	4.4460	4.4562	4.4664	4.4766
44	4.4868	4.4969	4.5071	4.5173	4.5275	4.5377	4.5479	4.5581	4.5683	4.5785
45	4.5887	4.5989	4.6091	4.6193	4.6295	4.6397	4.6499	4.6601	4.6703	4.6805
46	4.6907	4.7009	4.7111	4.7213	4.7315	4.7417	4.7519	4.7621	4.7723	4.7825
47	4.7927	4.8029	4.8131	4.8233	4.8335	4.8437	4.8538	4.8640	4.8742	4.8844
48	4.8946	4.9048	4.9150	4.9252	4.9354	4.9456	4.9558	4.9660	4.9762	4.9864
49	4.9966	5.0068	5.0170	5.0272	5.0374	5.0476	5.0578	5.0680	5.0782	5.0884

续表 2

kgf / N \ N	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
50	5.0986	5.1088	5.1190	5.1292	5.1394	5.1496	5.1598	5.1700	5.1802	5.1904
51	5.2006	5.2107	5.2209	5.2311	5.2413	5.2515	5.2617	5.2719	5.2821	5.2923
52	5.3025	5.3127	5.3229	5.3331	5.3433	5.3535	5.3637	5.3739	5.3841	5.3943
53	5.4045	5.4147	5.4249	5.4351	5.4453	5.4555	5.4657	5.4759	5.4861	5.4963
54	5.5065	5.5167	5.5269	5.5371	5.5473	5.5575	5.5677	5.5778	5.5880	5.5982
55	5.6084	5.6186	5.6288	5.6390	5.6492	5.6594	5.6696	5.6798	5.6900	5.7002
56	5.7104	5.7206	5.7308	5.7410	5.7512	5.7614	5.7716	5.7818	5.7920	5.8022
57	5.8124	5.8226	5.8328	5.8430	5.8532	5.8634	5.8736	5.8838	5.8940	5.9042
58	5.9144	5.9246	5.9347	5.9449	5.9551	5.9653	5.9755	5.9857	5.9959	6.0061
59	6.0163	6.0265	6.0367	6.0469	6.0571	6.0673	6.0775	6.0877	6.0979	6.1081
60	6.1183	6.1285	6.1387	6.1489	6.1591	6.1693	6.1795	6.1897	6.1999	6.2101
61	6.2203	6.2305	6.2407	6.2509	6.2611	6.2713	6.2815	6.2916	6.3018	6.3120
62	6.3222	6.3324	6.3426	6.3528	6.3630	6.3732	6.3834	6.3936	6.4038	6.4140
63	6.4242	6.4344	6.4446	6.4548	6.4650	6.4752	6.4854	6.4956	6.5058	6.5160
64	6.5262	6.5364	6.5466	6.5568	6.5670	6.5772	6.5874	6.5976	6.6078	6.6180
65	6.6282	6.6384	6.6485	6.6587	6.6689	6.6791	6.6893	6.6995	6.7097	6.7199
66	6.7301	6.7403	6.7505	6.7607	6.7709	6.7811	6.7913	6.8015	6.8117	6.8219
67	6.8321	6.8423	6.8525	6.8627	6.8729	6.8831	6.8933	6.9035	6.9137	6.9239
68	6.9341	6.9443	6.9545	6.9647	6.9749	6.9851	6.9953	7.0055	7.0156	7.0258
69	7.0360	7.0462	7.0564	7.0666	7.0768	7.0870	7.0972	7.1074	7.1176	7.1278
70	7.1380	7.1482	7.1584	7.1686	7.1788	7.1890	7.1992	7.2094	7.2196	7.2298
71	7.2400	7.2502	7.2604	7.2706	7.2808	7.2910	7.3012	7.3114	7.3216	7.3318
72	7.3420	7.3522	7.3624	7.3725	7.3827	7.3929	7.4031	7.4133	7.4235	7.4337
73	7.4439	7.4541	7.4643	7.4745	7.4847	7.4949	7.5051	7.5153	7.5255	7.5357
74	7.5459	7.5561	7.5663	7.5765	7.5867	7.5969	7.6071	7.6173	7.6275	7.6377
75	7.6479	7.6581	7.6683	7.6785	7.6887	7.6989	7.7091	7.7193	7.7294	7.7396
76	7.7498	7.7600	7.7702	7.7804	7.7906	7.8008	7.8110	7.8212	7.8314	7.8416
77	7.8518	7.8620	7.8722	7.8824	7.8926	7.9028	7.9130	7.9232	7.9334	7.9436
78	7.9538	7.9640	7.9742	7.9844	7.9946	8.0048	8.0150	8.0252	8.0354	8.0456
79	8.0558	8.0660	8.0762	8.0863	8.0965	8.1067	8.1169	8.1271	8.1373	8.1475
80	8.1577	8.1679	8.1781	8.1883	8.1985	8.2087	8.2189	8.2291	8.2393	8.2495
81	8.2597	8.2699	8.2801	8.2903	8.3005	8.3107	8.3209	8.3311	8.3413	8.3515
82	8.3617	8.3719	8.3821	8.3923	8.4025	8.4127	8.4229	8.4331	8.4433	8.4534
83	8.4636	8.4738	8.4840	8.4942	8.5044	8.5146	8.5248	8.5350	8.5452	8.5554
84	8.5656	8.5758	8.5860	8.5962	8.6064	8.6166	8.6268	8.6370	8.6472	8.6574
85	8.6676	8.6778	8.6880	8.6982	8.7084	8.7186	8.7288	8.7390	8.7492	8.7594
86	8.7696	8.7798	8.7900	8.8002	8.8103	8.8205	8.8307	8.8409	8.8511	8.8613
87	8.8715	8.8817	8.8919	8.9021	8.9123	8.9225	8.9327	8.9429	8.9531	8.9633
88	8.9735	8.9837	8.9939	9.0041	9.0143	9.0245	9.0347	9.0449	9.0551	9.0653
89	9.0755	9.0857	9.0959	9.1061	9.1163	9.1265	9.1367	9.1469	9.1571	9.1672
90	9.1774	9.1876	9.1978	9.2080	9.2182	9.2284	9.2386	9.2488	9.2590	9.2692
91	9.2794	9.2896	9.2998	9.3100	9.3202	9.3304	9.3406	9.3508	9.3610	9.3712
92	9.3814	9.3916	9.4018	9.4120	9.4222	9.4324	9.4426	9.4528	9.4630	9.4732
93	9.4834	9.4936	9.5038	9.5140	9.5241	9.5343	9.5445	9.5547	9.5649	9.5751
94	9.5853	9.5955	9.6057	9.6159	9.6261	9.6363	9.6465	9.6567	9.6669	9.6771
95	9.6873	9.6975	9.7077	9.7179	9.7281	9.7383	9.7485	9.7587	9.7689	9.7791
96	9.7893	9.7995	9.8097	9.8199	9.8301	9.8403	9.8505	9.8607	9.8709	9.8811
97	9.8912	9.9014	9.9116	9.9218	9.9320	9.9422	9.9524	9.9626	9.9728	9.9830
98	9.9932	10.003	10.014	10.024	10.034	10.044	10.054	10.065	10.075	10.085
99	10.095	10.105	10.116	10.126	10.136	10.146	10.156	10.167	10.177	10.187
100	10.197	10.207	10.218	10.228	10.238	10.248	10.258	10.269	10.279	10.289