Temperature °C / °F / °K

°C	°F	°K	°C	°F	°K	°C	°F	°K	°C	°F	°K
-273	-459,4	0,15	110	230	383,15	500	932	773,15	900	1652	1173,15
-270	-454	3,15	120	248	393,13	510	950	783,15	920	1688	1193,15
-260	-436	13,15	130	266	403,15	520	968	793,15	940	1724	1213,15
-250	-418	23,15	140	284	413,15	530	986	803,15	960	1760	1233,15
-240	-400	33,15	150	302	423,15	540	1004	813,15	980	1796	1253,15
-230	-382	43,15	160	320	433,15	550	1022	823,15	1000	1832	1273,15
-220	-364	53,15	170	338	443,15	560	1040	833,15	1020	1868	1293,15
-210	-346	63,15	180	356	453,15	570	1058	843,15	1040	1904	1313,15
-200	-328	73,15	190	374	463,15	580	1076	853,15	1060	1940	1333,15
-190	-310	83,15	200	392	473,15	590	1094	863,15	1080	1976	1353,15
-180	-292	93,15	210	410	483,15	600	1112	873,15	1100	2012	1373,15
-170	-274	103,15	220	428	493,15	610	1130	883,15	1120	2048	1393,15
-160	-256	113,15	230	446	503,15	620	1148	893,15	1140	2084	1413,15
-150	-238	123,15	240	464	513,15	630	1166	903,15	1160	2120	1433,15
-140	-220	133,15	250	482	523,15	640	1184	913,15	1180	2156	1453,15
-130	-202	143,15	260	500	533,15	650	1202	923,15	1200	2192	1473,15
-120	-184	153,15	270	518	543,15	660	1220	933,15	1220	2228	1493,15
-110	-166	163,15	280	536	553,15	670	1238	943,15	1240	2264	1513,15
-100	-148	173,15	290	554	563,15	680	1256	953,15	1260	2300	1533,15
-90	-130	183,15	300	572	573,15	690	1274	963,15	1280	2336	1553,15
-80	-112	193,15	310	590	583,15	700	1292	973,15	1300	2372	1573,15
-70	-94	203,15	320	608	593,15	710	1310	983,15	1320	2408	1593,15
-60	-76	213,15	330	626	603,15	720	1328	993,15	1340	2444	1613,15
-50	-58	223,15	340	644	613,15	730	1346	1003,15	1360	2480	1633,15
-40	-40	233,15	350	662	623,15	740	1364	1013,15	1380	2516	1653,15
-30	-22	243,15	360	680	633,15	750	1382	1023,15	1400	2552	1673,15
-20	-4	253,15	370	698	643,15	760	1400	1033,15	1420	2588	1693,15
-10	+14	263,15	380	716	653,15	770	1418	1043,15	1440	2624	1713,15
0	32	273,15	390	734	663,15	780	1436	1053,15	1460	2660	1733,15
+10	50	283,15	400	752	673,15	790	1454	1063,15	1480	2696	1753,15
20	68	293,15	410	770	683,15	800	1472	1073,15	1500	2732	1773,15
30	86	303,15	420	788	693,15	810	1490	1083,15	1550	2822	1823,15
40	104	313,15	430	806	703,15	820	1508	1093,15	1600	2912	1873,15
50	122	323,15	440	824	713,15	830	1526	1103,15	1650	3002	1923,15
60	140	333,15	450	842	723,15	840	1544	1113,15	1700	3092	1973,15
70	158	343,15	460	860	733,15	850	1562	1123,15	1750	3182	2023,15
80	176	353,15	470	878	743,15	860	1580	1133,15	1800	3272	2073,15
90	194	363,15	480	896	753,15	870	1598	1143,15	1850	3362	2123,15
100	212	373,15	490	914	763,15	880	1616	1153,15	1900	3452	2173,15

-17,77…	0	255,37

- 100°F = how much °C "Calculation": (-100-32) : 1,8 = - 73,33…°C
+ 100°F = how much °C "Calculation": (+100-32) : 1,8 = + 37,77…°C

- 100°C = how much °F "Calculation": - 100 x 1,8 + 32 = - 148°F
+ 100°C = how much °F "Calculation": +100 x 1,8 + 32 = + 212°F

if the total measuring span has to be calculated e.g.:
-100+400°F = 500°F : 1,8 = 277,77…°C (-73,33…°C + 204,44…°C)

Pressure

Unit	bar	mbar	mWS	mmWS	Pa	KPa	MPa	PSI	
1 bar	1	1.000	10	10.000	100.000	100	0,1	14,5	
1 mbar	0,001	1	0,01	10	100	0,1	0,0001	0,0145	
1 mWS	0,1	100	1	1.000	10.000	10	0,01	1,45	
1 mmWS	0,0001	0,1	0,001	1	10	0,01	0,00001	0,00145	
1 Pa	0,00001	0,01	0,0001	0,1	1	0,001	0,000001	0,000145	
1 KPa	0,01	10	0,1	100	1.000	1	0,001	0,145	
1 MPa	10	10.000	100	100.000	1.000.000	1.000	1	145	

Tolerances for dial thermometers

Nominal range °C	Graduation °C	Measuring range °C	Tolerances in °C for accuracy class 1	2
-20+40	1,0	-10+30	1	2
-20+60	1,0	-10+50	1	2
-30+50	1,0	-20+40	1	2
-30+70	1,0	-20+60	1	2
-40+40	1,0	-30+30	1	2
-40+60	1,0	-30+50	1	2
0-60	1,0	+10+50	1	2
0-80	1,0	+10+70	1	2
0-100	1,0	+10+90	1	2
0-120	2,0	+10+110	2	4
0-160	2,0	+20+140	2	4
0-200	2,0	+20+180	2	4
0-250	5,0	+30+220	2,5	5
0-300	5,0	+30+270	5	10
0-400	5,0	+50+350	5	10
0-500	10,0	+50+450	5	10
0-600	10,0	+100+500	10	15

Degree of protection e.g. IP 54

First index figure	Foreign bodies protection	Second index figure	Water protection
0	No protection against accidental contact, no protection against solid foreign bodies	1	Protection against vertical water drops
1	Protection against contact with any large area by hand and against solid foreign bodies with Ø > 50 mm	2	Protection against diagonal water drops up to a 15° angle
2	Protection against contact with any large area by hand and against solid foreign bodies with Ø > 12 mm	3	Protection against diagonal water drops up to a 60° angle
3	Protection against tools, wires or similar objects with Ø > 2,5 mm, protection against foreign solid bodies with Ø > 2,5 mm	4	Protection against splashed water from all directions
4	Protection against tools, wires or similar objects with > 1,0 mm, protection against foreign solid bodies with Ø > 1,0 mm	5	Protection against water (out of a nozzle) from all directions
5	Full protection against contact, protection against interior injurious dust deposit	6	Protection against strong jets of water (out of a nozzle) from all directions
6	Total protection against contact, protection against penetration of dust	7	Protection against ingress of water in case of temporary immersion (approx. 30 minutes)

Highest working pressure in "bar" for pressure gauge siphons (page 099)

Tube dimensions	Material	AISI	Highest working temperature in °C 200	250	300	350	400	450	500
20,0 x 2,60	ST 35.8 I		183	157	133	113	100		
21,3 x 3,20	ST 35.8 I		196	173	140	117	106		
21,3 x 3,20	15/16 Mo 3						183	172	108
21,3 x 3,20	13 CrMo 44						218	206	179
21,3 x 3,20	10 CrMo 910						218	206	162
20,0 x 2,50	1.4571	316 Ti	242	235	227	220	214	205	
21,3 x 2,60	1.4541	321	202	196	186	180	173	164	
21,3 x 2,60	1.4571	316 Ti	248	240	232	225	218	209	

The above mentioned values are only benchmarks. An accurate determination should follow according to DIN 2413.
Tabular values apply to seamless, plain tubes in as new condition. The reduction of material's tubular cross-section caused by cutted threads and bends as well as welding factors are not considered.
Above mentioned values corresponding to material data sheets of our tube suppliers.