

## TEMPERATURE CONVERSION CHART

The central figure in each column is the temperature in degrees Celsius or Fahrenheit which require conversion. If this is in terms of degrees Celsius, the corresponding Fahrenheit temperature will be found to the right of it; if the given temperature is in terms of Fahrenheit, the corresponding Celsius temperature is to the left.

°C		°F	°C		°F	°C		°F
-73.3	<b>-100</b>	-148.0	-6.7	<b>20</b>	68.0	10.0	<b>50</b>	122.0
-68.7	<b>-90</b>	-130.0	-6.1	<b>21</b>	69.8	10.6	<b>51</b>	123.8
-62.2	<b>-80</b>	-112.0	-5.6	<b>22</b>	71.6	11.1	<b>52</b>	125.6
-56.7	<b>-70</b>	-94.0	-5.0	<b>23</b>	73.4	11.7	<b>53</b>	127.7
-51.0	<b>-60</b>	-76.0	-4.4	<b>24</b>	75.2	12.2	<b>54</b>	129.2
-45.6	<b>-50</b>	-58.0	-3.9	<b>25</b>	77.0	12.8	<b>55</b>	131.0
-40.0	<b>-40</b>	-40.0	-3.3	<b>26</b>	78.8	13.3	<b>56</b>	132.8
-34.4	<b>-30</b>	-22.0	-2.8	<b>27</b>	80.6	13.9	<b>57</b>	134.6
-28.9	<b>-20</b>	-4.0	-2.2	<b>28</b>	82.4	14.4	<b>58</b>	136.4
-23.3	<b>-10</b>	14.0	-1.7	<b>29</b>	84.2	15.0	<b>59</b>	138.2
-17.8	<b>0</b>	32.0	-1.1	<b>30</b>	86.0	15.6	<b>60</b>	140.0
-17.2	<b>1</b>	33.8	-0.6	<b>31</b>	87.8	16.1	<b>61</b>	141.8
-16.7	<b>2</b>	35.6	0.0	<b>32</b>	89.6	16.7	<b>62</b>	143.6
-16.1	<b>3</b>	37.4	0.6	<b>33</b>	91.4	17.2	<b>63</b>	145.4
-15.6	<b>4</b>	39.2	1.1	<b>34</b>	93.2	17.8	<b>64</b>	147.2
-15.0	<b>5</b>	41.0	1.7	<b>35</b>	95.0	18.3	<b>65</b>	149.0
-14.4	<b>6</b>	42.8	2.2	<b>36</b>	96.8	18.9	<b>66</b>	150.8
-13.9	<b>7</b>	44.6	2.8	<b>37</b>	98.6	19.4	<b>67</b>	152.6
-13.3	<b>8</b>	46.4	3.3	<b>38</b>	100.4	20.0	<b>68</b>	154.4
-12.8	<b>9</b>	48.2	3.9	<b>39</b>	102.2	20.6	<b>69</b>	156.2
-12.2	<b>10</b>	50.0	4.4	<b>40</b>	104.0	21.2	<b>70</b>	158.0
-11.7	<b>11</b>	51.8	5.0	<b>41</b>	105.8	21.7	<b>71</b>	159.8
-11.1	<b>12</b>	53.6	5.6	<b>42</b>	107.6	22.2	<b>72</b>	161.6
-10.6	<b>13</b>	55.4	6.1	<b>43</b>	109.4	22.8	<b>73</b>	163.4
-10.0	<b>14</b>	57.2	6.7	<b>44</b>	111.2	23.3	<b>74</b>	165.2
-9.4	<b>15</b>	59.0	7.2	<b>45</b>	113.0	23.9	<b>75</b>	167.0
-8.9	<b>16</b>	60.8	7.8	<b>46</b>	114.8	24.4	<b>76</b>	168.8
-8.3	<b>17</b>	62.6	8.3	<b>47</b>	116.6	25.0	<b>77</b>	170.6
-7.8	<b>18</b>	64.4	8.9	<b>48</b>	118.4	25.6	<b>78</b>	172.4
-7.2	<b>19</b>	66.2	9.4	<b>49</b>	120.2	26.1	<b>79</b>	174.2



°C	°F	°C	°F	°C	°F
26.7	<b>80</b>	176.0	48.9	<b>120</b>	248.0
27.2	<b>81</b>	177.8	49.4	<b>121</b>	249.8
27.8	<b>82</b>	179.6	50.0	<b>122</b>	251.6
28.3	<b>83</b>	181.4	50.6	<b>123</b>	253.4
28.9	<b>84</b>	183.2	51.1	<b>124</b>	255.2
29.4	<b>85</b>	185.0	51.7	<b>125</b>	257.0
30.0	<b>86</b>	186.8	52.2	<b>126</b>	258.8
30.6	<b>87</b>	188.6	52.8	<b>127</b>	260.6
31.1	<b>88</b>	190.4	53.3	<b>128</b>	262.4
31.7	<b>89</b>	192.2	53.9	<b>129</b>	264.2
32.2	<b>90</b>	194.0	54.4	<b>130</b>	266.0
32.8	<b>91</b>	195.8	55.0	<b>131</b>	267.8
33.3	<b>92</b>	197.6	55.6	<b>132</b>	269.6
33.9	<b>93</b>	199.4	56.1	<b>133</b>	271.4
34.4	<b>94</b>	201.2	56.7	<b>134</b>	273.2
35.0	<b>95</b>	203.0	57.2	<b>135</b>	275.0
35.6	<b>96</b>	204.8	57.8	<b>136</b>	276.8
36.1	<b>97</b>	206.6	58.3	<b>137</b>	278.6
36.7	<b>98</b>	208.4	58.9	<b>138</b>	280.4
37.2	<b>99</b>	210.2	59.4	<b>139</b>	282.2
37.8	<b>100</b>	212.0	60.0	<b>140</b>	284.0
38.3	<b>101</b>	213.8	60.6	<b>141</b>	285.8
38.8	<b>102</b>	215.6	61.1	<b>142</b>	287.6
39.4	<b>103</b>	217.4	61.7	<b>143</b>	289.4
40.0	<b>104</b>	219.2	62.2	<b>144</b>	291.2
40.6	<b>105</b>	221.0	62.8	<b>145</b>	293.0
41.1	<b>106</b>	222.8	63.3	<b>146</b>	294.8
41.7	<b>107</b>	224.6	63.9	<b>147</b>	296.6
42.2	<b>108</b>	226.4	64.4	<b>148</b>	298.4
42.8	<b>109</b>	228.2	65.0	<b>149</b>	300.2
43.3	<b>110</b>	230.0	65.6	<b>150</b>	302.0
43.9	<b>111</b>	231.8	66.1	<b>151</b>	303.8
44.4	<b>112</b>	233.6	66.7	<b>152</b>	305.6
45.0	<b>113</b>	235.4	67.2	<b>153</b>	307.4
45.6	<b>114</b>	237.2	67.8	<b>154</b>	309.2
46.1	<b>115</b>	239.0	68.3	<b>155</b>	311.0
46.7	<b>116</b>	240.8	68.9	<b>156</b>	312.8
47.2	<b>117</b>	242.6	69.4	<b>157</b>	314.6
47.8	<b>118</b>	244.4	70.0	<b>158</b>	316.4
48.3	<b>119</b>	246.2	70.6	<b>159</b>	318.2

°C	°F	°C	°F	°C	°F
93.3	<b>200</b>	392.0	204.4	<b>400</b>	752.0
98.9	<b>210</b>	410.0	210.0	<b>410</b>	770.0
104.4	<b>220</b>	428.0	215.6	<b>420</b>	788.0
110.0	<b>230</b>	446.0	221.1	<b>430</b>	806.0
115.6	<b>240</b>	464.0	226.7	<b>440</b>	824.0
121.1	<b>250</b>	482.0	232.2	<b>450</b>	842.0
126.7	<b>260</b>	500.0	237.8	<b>460</b>	860.0
132.2	<b>270</b>	518.0	243.3	<b>470</b>	878.0
137.8	<b>280</b>	536.0	248.9	<b>480</b>	896.0
143.3	<b>290</b>	554.0	254.4	<b>490</b>	914.0
148.9	<b>300</b>	572.0	260.0	<b>500</b>	932.0
154.4	<b>310</b>	590.0	265.6	<b>510</b>	950.0
160.0	<b>320</b>	608.0	271.1	<b>520</b>	968.0
165.6	<b>330</b>	626.0	276.7	<b>530</b>	986.0
171.1	<b>340</b>	644.0	282.2	<b>540</b>	1004.0
176.7	<b>350</b>	662.0	287.8	<b>550</b>	1022.0
182.2	<b>360</b>	680.0	293.3	<b>560</b>	1040.0
187.8	<b>370</b>	698.0	298.9	<b>570</b>	1058.0
193.3	<b>380</b>	716.0	304.4	<b>580</b>	1076.0
198.9	<b>390</b>	734.0	310.0	<b>590</b>	1094.0

°C =  $\frac{5}{9} (°F - 32)$   
°F =  $(\frac{5}{9} \times °C) + 32$



MISCELLANEOUS CONVERSION CHART

Some useful conversion factors are listed below. For a full range, consult [www.onlineconversion.com](http://www.onlineconversion.com)

TO CONVERT FROM:	TO:	MULTIPLY BY:
<b>Calorific Value.</b> SI units - mass basis-Joule/kilogramme (J/kg); volume basis-Joule/cubic metre (J/m <sup>3</sup> )		
MJ/kg	Btu/lb	4.299 x 10 <sup>2</sup>
Btu/lb	kWh/kg	6.461 x 10 <sup>-4</sup>
cal/g(kcal/kg)	Btu/lb	1.8
<b>Concentration</b> (mass/volume) and <b>Density.</b> SI unit - kilogramme/cubic metre (kg/m <sup>3</sup> )		
kg/m <sup>3</sup> (g/litre)	kg/litre	10 <sup>-3</sup>
lb/1000 UK gal	mg/litre	99.78
lb/1000 US gal	mg/litre	1.198 x 10 <sup>2</sup>
g/US gal	g/litre	0.264
kg/litre	lb/UK gal	10.02
kg/litre	lb/ft <sup>3</sup>	62.43
<b>Concentration</b> (volume/volume). SI unit - cubic metre/cubic metre (m <sup>3</sup> /m <sup>3</sup> )		
ml/UK gal	ml/litre or litre/m <sup>3</sup>	0.22
ml/US gal	ml/litre or litre/m <sup>3</sup>	0.264
ppm	% vol	10 <sup>-4</sup>
<b>Energy/Heat/Work.</b> SI unit - Joule (J)		
Btu	kJ	1.055
Btu	kWh	2.9307 x 10 <sup>-4</sup>
therm	MJ	1.055 x 10 <sup>2</sup>
cal	J	4.1868
kWh	MJ	3.6
<b>Force.</b> SI unit - Newton (N)		
lbf	N	4.448
pdl	N	1.38255 x10 <sup>-1</sup>
dyne	mN	0.01
<b>Length.</b> SI unit - metre (m)		
in	mm	25.4
ft	m	0.3048

TO CONVERT FROM:	TO:	MULTIPLY BY:
<b>Mass.</b> SI unit - kilogram (kg)		
kg	lb	2.2046
lb	g	4.536 x 10 <sup>2</sup>
UK ton (2240 lb) long	tonne(t)	1.016
UK ton (2000 lb) short	tonne(t)	0.907
<b>Power/Heat Flow.</b> SI unit - Watt (W)		
h.p.	kW	0.7457
ft.lbf/s	W	1.3558
Btu/hr	W	0.2931
<b>Pressure.</b> SI unit - Newton/square metre (N/m <sup>2</sup> )		
N/m <sup>2</sup> (Pascal)	Bar	10 <sup>-5</sup>
lbf/in <sup>2</sup> (psi)	N/m <sup>2</sup> (Pa)	6.895 x 10 <sup>3</sup>
lbf/in <sup>2</sup>	mbar	68.948
kgf/cm	2N/m <sup>2</sup>	9.807 x 10 <sup>4</sup>
kgf/cm <sup>2</sup>	lbf/in <sup>2</sup>	14.223
in Hg	mbar	33.864
atmosphere	mbar	1013.25
lbf/in <sup>2</sup> (psi)	Pa	6.894757 x 10 <sup>3</sup>
lbf/in <sup>2</sup> (psi)	Bar	0.06894
Bar	Pa (N/m <sup>2</sup> )	10 <sup>5</sup>
<b>Volume.</b> SI units - cubic metre (m <sup>3</sup> )		
m <sup>3</sup>	ft <sup>3</sup>	35.315
in <sup>3</sup>	cm <sup>3</sup>	16.387
UK gal	m <sup>3</sup>	4.546 x 10 <sup>-3</sup>
US gal	m <sup>3</sup>	3.785 x 10 <sup>-3</sup>
UK gal	litre	4.546
US gal	litre	3.785
<b>Relative Density) Specific Gravity/API conversion</b> (Relative Density) Specific Gravity 15.6/15.6 °C = $\frac{141.5}{^\circ\text{API} + 131.5}$		
<b>Kinematic viscosity</b> mm <sup>2</sup> /s = 1cSt		





NOTES

9.6

