FORMULA:

$C = X_W C_W + X_P C_P + X_{CH} C_{CH} + X_G C_G + X_c C_c + X_h C_h$

Cp del agua(a)	W=4.0817-0.0053062*T+0.00099516*T^2
Cp del agua(b)	W=4.1762-0.000090864*T+0.0000054731*T^2
Cp de la proteína	P=2.0082+0.0012089*T-0.0000013129*T^2
Cp de la grasa	G=1.9842+0.0014733*T-0.0000048008*T^2
Cp de carbohidratos	CH=1.5488+0.0019625*T-0.0000059399*T^2
Cp de la ceniza	C=1.0926+0.0018896*T-0.0000036817*T^2
Cp del hielo	C=2.0623+0.0060769*T

Table 16.3 Specific Heat of Different Food Components as a Function of Temperature

Component	Temperature Function	Standard Error	Standard % Error
Protein	$c_p = 2008.2 + 1.2089T - (1.3129 \times 10^{-3})T^2$	0.1147	5.57
Fat	$c_p = 1984.2 + 1.4733T - (1.3129 \times 10^{-3})T^2$	0.0236	1.16
Carbohydrate	$c_p = 1548.8 + 1.9625T - (5.9399 \times 10^{-3})T^2$	0.0986	5.96
Fiber	$c_p = 1845.9 + 1.8306T - (4.6509 \times 10^{-3})T^2$	0.0293	1.66
Ash	$c_p = 1092.6 + 1.8896T - (3.6817 \times 10^{-3})T^2$	0.0296	2.47
Water[a]	$c_p = 4081.7 - 5.3062T + (9.9516 \times 10^{-1})T^2$	0.0988	2.15
Water[b]	$c_p = 4176.2 - (9.0864 \times 10^{-2})T + (5.4731 \times 10^{-3})T^2$	0.0159	0.38
Ice	$c_p = 2062.3 + 6.0769T$		

Source: Adapted from Choi, Y. and Okos, M.R., in *Food Processing and Process Applications Vol. I Transport Phenomenon*, Elsevier, New York, 1986.

[a] For a temperature range of −40°C to 0°C.

[b] For a temperature range of 0°C to 150°C.