Macro para o Cálculo de Temperatura

	B	C	D
1	**Variante**	**1**	
2	Produtividade	500	kg/h
3	Temp fin do metal	1100	ºC
4	Temp inic do metal	30	ºC
5	Calor esp do metal	0.68	kJ/kgK
6	Temp gas escap	680	ºC
7	Temp exterior	25	ºC
8	Tcomb	150	ºC
9	Ro comb	1	Kg/m³
10	Cp Combustível	1.4	KJ/kg·K
11	Cp ar	1.305832	KJ/m³K
12	Temp ar	220	ºC
13	Coef Excesso de ar	1.4	
14	Massa	Trabalho	Seca
15	Carbono	52.92	54
16	Hidrogénio	9.8	10
17	Nitrogénio	4.9	5
16	Oxigénio	11.76	12
19	Enxofre	6.86	7
20	Cinzas	11.76	12
21	Humidade	2	
22	**Total**	**100**	**100**
23	Poder C Inferior	27458.01	KJ/kg
24	Poder C superior	29727.79	KJ/kg
25	**V ar**	**7.367**	**m³/kg**
26	V nitro	5.859	m³/kg
27	V agua	1.237	m³/kg
28	V RO2	1.036	m³/kg
29	V nitro (real)	8.188	m³/kg
30	V agua (real)	1.285	m³/kg
31	V RO2 (real)	1.036	m³/kg
32	VO2	0.619	m³/kg
33	**Vgases de comb**	**11.127**	**m³/kg**

=D15*(100-$C$21)/100

=D16*(100-$C$21)/100

=D17*(100-$C$21)/100

=D18*(100-$C$21)/100

=D19*(100-$C$21)/100

=D20*(100-$C$21)/100

=4.187*(81*C15+300*C16-26*(C18-C19)-6*(C21+9*C16))

=C23+25.1639*(C21+9*C16)

=0.0889*(C15+0.75*C19)+0.265*C16-0.0333*C18

=0.79*C25+0.008*C17

=0.1116*C16+0.0124*C21+0.0161*C25

=1.867*(C15+0.375*C19)/100

=C26+(C13-1)*C25*0.79

=C27+(C13-1)*0.0161*C25

=C28

=(C13-1)*C25*0.21

=SUM(C29:C32)

35	**Entalp Gases**	**2752.782**	KJ/m³	=C29/$C$33
34	Rnitro	0.736	m³/m³	
35	Ragua	0.115	m³/m³	=C31/$C$33
36	RCO2	0.093	m³/m³	
37	RO2	0.056	m³/m³	=SUM(C34:C37)
38	∑	1		
39	Entalpia Vg	2467.702	KJ/m³	=C12*C11*C13*C25/C33
40	Entalpia Ar	266.302	KJ/m³	
41	Entalpia Comb	18.873	KJ/m³	=SUM(C39:C41)
42	**Entalpia Total**	**2752.87678**	KJ/m³	
43	**Temp**	**1710.42**	**ºC**	=(0.00007*C43^2+1.3503*C43-21.897)*C34
44	Entalpia nitro	1834.027	KJ/m³	
45	Entalpia agua	378.406	KJ/m³	=(0.0002*C43^2+2.1923*C43-106.42)*C36
46	Entalpia CO2	393.715	KJ/m³	
47	Entalpia O2	146.634	KJ/m³	=SUM(C44:C47)
48	**Entalp Gases**	**2752.782**	**KJ/m³**	

=C30/$C$33

=C32/C33

=C23/C33

=C8*C1 0/(C33*C9)

=(0.0002*C43^2+1.5986*C43-41.555)*C35

=(0.00007*C43^2+1.4389*C43-29.467)*C37

```
Sub Cálculo_Tc()
'
' Cálculo_Tc Macro
' Macro recorded 30-09-2006 by Jorge Olivio Penicela Nhambiu
'
' Keyboard Shortcut: Ctrl+Shift+C
Dim x, Dim y, Dim z
x = Range("C42").Value
z = 1000
y = Range("C48").Value
Do
z = z + 0.01
Range("C43").Value = z
y = Range("C48").Value
Loop Until Abs(x - y) < 0.1
MsgBox " convergiu!"
End Sub
```