DIN 99
This function is coded in VBA.

```
Function DIN99(L1, A1, B1, L2, A2, B2)
Dim e As Variant, f As Variant, G As Variant, c16 As Variant, s16
As Variant, radians As Variant
Dim L199 As Variant, a199 As Variant, b199 As Variant
Dim L299 As Variant, a299 As Variant, b299 As Variant
Dim kL As Variant, C99 As Variant, kC As Variant, ConstantE As
Variant
'Set up constants
******************************************************
Application.ScreenUpdating = False
kL = 1#: kC = 1#
radians = Application.WorksheetFunction.Pi() / 180
ConstantE = 1 / Log(Exp(1))
c16 = Cos(radians * 16)
s16 = Sin(radians * 16)
'Calculate color difference
***********************************************
e = A1 * c16 + B1 * s16
f = 0.7 * (-A1 * s16 + B1 * c16)
G = Sqr(e ^ 2 + f ^ 2)
If (B1 = 0 And A1 = 0) Then
   h99 = 0
Else
   h99 = Application.WorksheetFunction.Atan2(e, f)
End If
C99 = ConstantE * Log(1 + 0.045 * G) / (0.045 * kL * kC)
L199 = 105.51 * ConstantE * Log(1 + 0.0158 * L1) / kL
a199 = C99 * Cos(h99)
b199 = C99 * Sin(h99)
e = A2 * c16 + B2 * s16
f = 0.7 * (-A2 * s16 + B2 * c16)
G = Sqr(e ^ 2 + f ^ 2)
If (B2 = 0 And A2 = 0) Then
   h99 = 0
Else
```

```
    h99 = Application.WorksheetFunction.Atan2(e, f)
End If
C99 = ConstantE * Log(1 + 0.045 * G) / (0.045 * kL * kC)
L299 = 105.51 * ConstantE * Log(1 + 0.0158 * L2) / kL
a299 = C99 * Cos(h99)
b299 = C99 * Sin(h99)

DIN99 = Sqr((L199 - L299) ^ 2 + (a199 - a299) ^ 2 + (b199 - b299) ^
2)
End Function
```