

MnO	70.94
MgO	40.3
CaO	56.08
ZnO	81.38
NiO	74.693
CoO	74.933

12887

2.7 wt% ZnO
 2.7 wt% NiO

8.105

8. If you mix 20 wt-% ideal pyrope and 80 wt-% ideal forsterite, what will the analysis of the mixture look like? [10]
9. A poster at a beach just north of Durban claims that the black grains in the sand are ilmenite. One grain gives the following analysis. Your comments (and correct mineral formula) please. [15]

	Wt%
TiO ₂	6.577
Cr ₂ O ₃	2.500
V ₂ O ₃	0.150
FeO	81.800 87.35
MgO	3.500
TOTAL	94.527 97.37



conjecture

10. I bought a gem garnet of yellowish green colour (grossular-andradite solid solution) and had it analyzed. The results came back as given below. Please evaluate critically. [25]

	Wt%
SiO ₂	37.690
TiO ₂	0.150
Al ₂ O ₃	19.320
FeO ₁	8.220
MnO	0.240
CaO	34.380
TOTAL	100.000

Ca₃Al₂Si₃O₁₂

Ca₃Fe₂Si₃O₁₂

Ca_{2.7}(Al_{1.7}Fe_{0.3})₂Si₃O₁₂ 1.721

Waffle

the low Fe content is not consistent with the structure of a garnet.