

Spinel Analyses

Al ₂ O ₃	71.53	Fluorescent X-Ray
MgO	28.30	Shows CaO < 0.1%
Loss, 1000°C	<u>.02</u>	Fe = .03%
	99.85	

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This analyses calculates to stoichiometric MgAl₂O₄; optical isotropic
 $n = 1.715-17.20$ Spinel $a_0 = 8.0833$

hkl	2 θ (CuK α_1)	2 θ (CuK α)
111	19.000	19.016
220	31.272	31.298
311	36.846	36.878
222	38.548	38.582
400	44.810	44.850
422	55.656	
511	59.358	
440	65.236	
531	68.628	
620	74.122	
533	77.342	
622	78.406	
444	82.628	
711	85.766	
642	90.970	
731	94.096	
800	99.338	
822	107.910	
751	111.222	
840	116.922	
911	120.482	
664	126.732	
931	130.734	
844	138.018	

hkl	2 θ (FeK α_1)	2 θ (FeK α)
111	23.942	23.953
220	39.596	39.624
311	46.802	46.836
222	49.018	
400	57.240	

hkl	$2\theta(\text{FeK}\alpha_1)$
422	71.840
511	76.960
440	85.284
531	90.218
620	98.466
533	103.490
622	105.184
444	112.126
711	117.562
642	127.309
731	133.801
800	146.672

Fe Radiation Used $\text{FeK}\alpha_1 = 1.93597$

$\text{FeK}\alpha = 1.93726$

Cu Radiation Used $\text{CuK}\alpha_1 = 1.54050$

$\text{CuK}\alpha = 1.54178$