NaCl

λ	1.542	angstrom
k	0.9	?

	2θ	**θ (deg)**	**θ (rad)**	**sin^2 θ**	**M^2**	**Miller Index**
1	27.3	13.65	0.238237	0.056	3	111
2	31.68	15.84	0.27646	0.075	4	200
3	45.42	22.71	0.396364	0.149	8	220
4	53.92	26.96	0.470541	0.206	11	311
5	56.44	28.22	0.492532	0.224	12	222

PEAK DIFFERENCES

sin^2 θ2- sin^2 θ1=λ^2/4a^2(M2^2-M1^2)			
θ2-θ1	difference	int.	M2^2-M1^2
2-1	0.019	1	=4-3
3-2	0.075	4	=8-4
4-3	0.056	3	=11-8
5-4	0.018	1	=12-11
6-5	-0.224	-12	=16-12

a	5.63E-10	m
V	1.78E-28	m^3
density	use MW to calculate	
MW	58.44	g/mol
Molecules/unit cell:	4	

hc=	1.99E-25
x-ray (.15 nm)	1.29E-15
	8050
EUV (15 nm)	1.32E-17
	83

Yellow

Color Centers - particle in a box:			
E_n=	((1.05E-34)^2*PI^2*3)/(2*(9.1E-31)*(5.63E-10)^2)		
=	5.66E-19	J	**$E=3\hbar^2\pi^2$ / 2a^2m_e**
=	3.54	eV	1.6E-19 J/eV
=	3.51E-07	m	$\lambda = hc/E_n$
=	350.97	nm	Your wavelength may off the color you observed. Come up with so

J
eV
J
eV

me reason why (see refs)