

## Almandine, $\text{Fe}^{2+}_3\text{Al}_2(\text{SiO}_4)_3$

Almandine

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A combined temperature dependent  $^{57}\text{Fe}$  Mossbauer and single crystal

X-ray diffraction study of synthetic almandine: evidence for the Gol'danskii-Karyagin Effect

11.525 11.525 11.525 90 90 90 Ia-3d

atom	x	y	z	Wyckoff
Fe	0	0.25	0.125	24c
Al	0	0	0	16a
Si	0.375	0	0.25	24d
O	0.03401	0.04901	0.65278	96h

### Raman Active Modes

WP	$A_{1g}$	$A_{1u}$	$A_{2g}$	$A_{2u}$	$E_u$	$E_g$	$T_{2u}$	$T_{2g}$	$T_{1u}$	$T_{1g}$
96h	3	-	-	-	-	6	-	9	-	-
24d	-	-	-	-	-	1	-	3	-	-
24c	-	-	-	-	-	1	-	2	-	-
16a	-	-	-	-	-	-	-	-	-	-

Total number of modes:

$$3A_{1g} + 8E_g + 14T_{2g} = 25$$