

Trigonal

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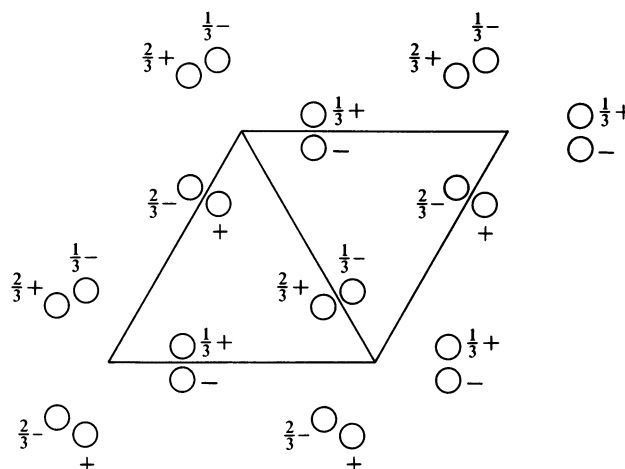
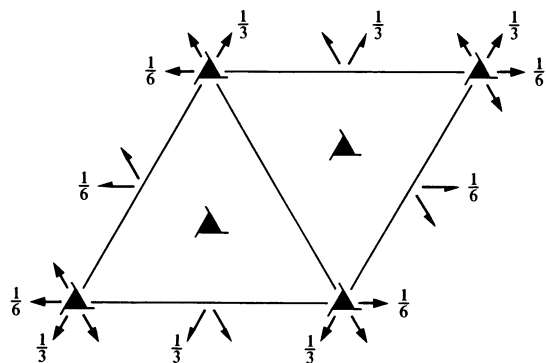
D_3^4

$P3_121$

Patterson symmetry $P\bar{3}m1$

$P3_121$

No. 152



Origin on $2[110]$ at $3_1(1,1,2)1$

Asymmetric unit $0 \leq x \leq 1; 0 \leq y \leq 1; 0 \leq z \leq \frac{1}{6}$
 Vertices $0,0,0 \quad 1,0,0 \quad 1,1,0 \quad 0,1,0$
 $0,0,\frac{1}{6} \quad 1,0,\frac{1}{6} \quad 1,1,\frac{1}{6} \quad 0,1,\frac{1}{6}$

Symmetry operations

- (1) 1
- (2) $3^+(0,0,\frac{1}{3}) \quad 0,0,z$
- (3) $3^-(0,0,\frac{2}{3}) \quad 0,0,z$
- (4) $2 \quad x,x,0$
- (5) $2 \quad x,0,\frac{1}{3}$
- (6) $2 \quad 0,y,\frac{1}{6}$

Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; (2); (4)

Positions

Multiplicity, Wyckoff letter, Site symmetry	Coordinates	Reflection conditions
6 <i>c</i> 1	(1) x,y,z (2) $\bar{y},x-y,z+\frac{1}{3}$ (3) $\bar{x}+y,\bar{x},z+\frac{2}{3}$ (4) y,x,\bar{z} (5) $x-y,\bar{y},\bar{z}+\frac{2}{3}$ (6) $\bar{x},\bar{x}+y,\bar{z}+\frac{1}{3}$	General: $000l: l = 3n$
3 <i>b</i> .2.	$x,0,\frac{5}{6}$ $0,x,\frac{1}{6}$ $\bar{x},\bar{x},\frac{1}{2}$	Special: no extra conditions
3 <i>a</i> .2.	$x,0,\frac{1}{3}$ $0,x,\frac{2}{3}$ $\bar{x},\bar{x},0$	

Symmetry of special projections

Along $[001] \quad p31m$ $\mathbf{a}' = \mathbf{a} \quad \mathbf{b}' = \mathbf{b}$ Origin at $0,0,z$	Along $[100] \quad p2$ $\mathbf{a}' = \frac{1}{2}(\mathbf{a} + 2\mathbf{b}) \quad \mathbf{b}' = \mathbf{c}$ Origin at $x,0,\frac{1}{3}$	Along $[210] \quad p11m$ $\mathbf{a}' = \frac{1}{2}\mathbf{b} \quad \mathbf{b}' = \mathbf{c}$ Origin at $x,\frac{1}{2}x,\frac{1}{6}$
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