

$p\bar{6}2m$

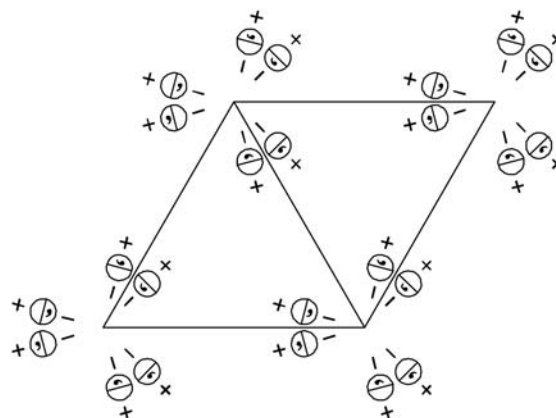
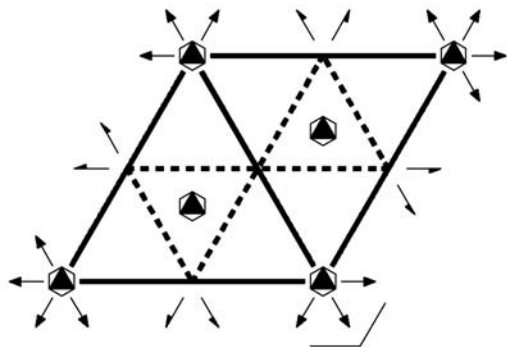
$\bar{6}2m$

Hexagonal/Hexagonal

No. 79

$p\bar{6}2m$

Patterson symmetry $p6/mmm$



Origin at $\bar{6}2m$

Asymmetric unit $0 \leq x \leq \frac{2}{3}; 0 \leq y \leq \frac{1}{2}; x \leq (1+y)/2; y \leq \min(1-x, x); 0 \leq z$
 Vertices $0, 0 \quad \frac{1}{2}, 0 \quad \frac{2}{3}, \frac{1}{3} \quad \frac{1}{2}, \frac{1}{2}$

Symmetry operations

- | | | |
|------------------|----------------------------------|----------------------------------|
| (1) 1 | (2) $3^+ 0, 0, z$ | (3) $3^- 0, 0, z$ |
| (4) $m x, y, 0$ | (5) $\bar{6}^- 0, 0, z; 0, 0, 0$ | (6) $\bar{6}^+ 0, 0, z; 0, 0, 0$ |
| (7) $2 x, x, 0$ | (8) $2 x, 0, 0$ | (9) $2 0, y, 0$ |
| (10) $m x, x, z$ | (11) $m x, 0, z$ | (12) $m 0, y, z$ |

Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; (2); (4); (7)

Positions

Multiplicity, Wyckoff letter, Site symmetry		Coordinates			Reflection conditions			
					General:			
12	h 1	(1) x, y, z (4) x, y, \bar{z} (7) y, x, \bar{z} (10) y, x, z	(2) $\bar{y}, x - y, z$ (5) $\bar{y}, x - y, \bar{z}$ (8) $x - y, \bar{y}, \bar{z}$ (11) $x - y, \bar{y}, z$	(3) $\bar{x} + y, \bar{x}, z$ (6) $\bar{x} + y, \bar{x}, \bar{z}$ (9) $\bar{x}, \bar{x} + y, \bar{z}$ (12) $\bar{x}, \bar{x} + y, z$				no conditions
								Special: no extra conditions
6	g $m..$	$x, y, 0$	$\bar{y}, x - y, 0$	$\bar{x} + y, \bar{x}, 0$	$y, x, 0$	$x - y, \bar{y}, 0$	$\bar{x}, \bar{x} + y, 0$	
6	f $..m$	$x, 0, z$	$0, x, z$	\bar{x}, \bar{x}, z	$x, 0, \bar{z}$	$0, x, \bar{z}$	$\bar{x}, \bar{x}, \bar{z}$	
4	e $3..$	$\frac{1}{3}, \frac{2}{3}, z$	$\frac{1}{3}, \frac{2}{3}, \bar{z}$	$\frac{2}{3}, \frac{1}{3}, \bar{z}$	$\frac{2}{3}, \frac{1}{3}, z$			
3	d $m2m$	$x, 0, 0$	$0, x, 0$	$\bar{x}, \bar{x}, 0$				
2	c $3.m$	$0, 0, z$	$0, 0, \bar{z}$					
2	b $\bar{6}..$	$\frac{1}{3}, \frac{2}{3}, 0$	$\frac{2}{3}, \frac{1}{3}, 0$					
1	a $\bar{6}2m$	$0, 0, 0$						

Symmetry of special projections

Along $[001]$ $p31m$

$\mathbf{a}' = \mathbf{a}$ $\mathbf{b}' = \mathbf{b}$

Origin at $0, 0, z$

Along $[100]$ $\bar{2}mm$

$\mathbf{a}' = \frac{1}{2}(\mathbf{a} + 2\mathbf{b})$

Origin at $x, 0, 0$

Along $[210]$ $\bar{1}1m$

$\mathbf{a}' = \frac{1}{2}\mathbf{b}$

Origin at $x, \frac{1}{2}x, 0$

Maximal non-isotypic subgroups

I	$[2] p\bar{6}11 (p\bar{6}, 74)$	1; 2; 3; 4; 5; 6
	$[2] p31m (70)$	1; 2; 3; 10; 11; 12
	$[2] p321 (68)$	1; 2; 3; 7; 8; 9
	$[3] pm2m (cm2m, 35)$	1; 4; 7; 10
	$[3] pm2m (cm2m, 35)$	1; 4; 8; 11
	$[3] pm2m (cm2m, 35)$	1; 4; 9; 12

IIa none

IIb $[3] h\bar{6}2m (\mathbf{a}' = 3\mathbf{a}, \mathbf{b}' = 3\mathbf{b}) (p\bar{6}m2, 78)$

Maximal isotypic subgroups of lowest index

IIc $[4] p\bar{6}2m (\mathbf{a}' = 2\mathbf{a}, \mathbf{b}' = 2\mathbf{b}) (79)$

Minimal non-isotypic supergroups

I $[2] p6/mmm (80)$

II $[2] h\bar{6}2m (p\bar{6}m2, 78)$