

$\rho 6_4 2 2$

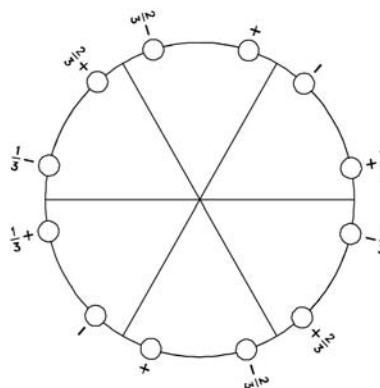
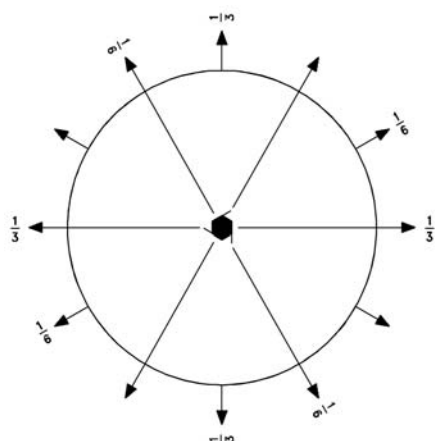
622

Hexagonal

No. 66

$\rho 6_4 2 2$

Patterson symmetry $\rho 6/mmm$



Origin on 222 at $6_4(2, 1, 1)(1, 2, 1)$

Asymmetric unit $0 \leq x; 0 \leq z \leq \frac{1}{6}$

Symmetry operations

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

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

Positions

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

Symmetry of special projections

Along [001] $6mm$

Along [100] $\bar{6}2mm$

Along [210] $\bar{6}2mm$

Origin at $0, 0, z$

$\mathbf{a}' = \mathbf{c}$
Origin at $x, 0, 0$

$\mathbf{a}' = \mathbf{c}$
Origin at $x, \frac{1}{2}x, \frac{1}{3}$

Maximal non-isotypic non-enantiomorphic subgroups

I	$[2] \bar{6}_4 11 (\bar{6}_4, 57)$	1; 2; 3; 4; 5; 6
	$[2] \bar{6}_3 21 (\bar{6}_3, 12, 47)$	1; 2; 3; 7; 8; 9
	$[2] \bar{6}_3 12 (47)$	1; 2; 3; 10; 11; 12
	$[3] \bar{6} 222 (\bar{6} 222, 13)$	1; 4; 7; 10
	$[3] \bar{6} 222 (\bar{6} 222, 13)$	1; 4; 8; 11
	$[3] \bar{6} 222 (\bar{6} 222, 13)$	1; 4; 9; 12

IIa none

IIb $[2] \bar{6}_3 22 (\mathbf{c}' = 2\mathbf{c}) (67)$

Maximal isotypic subgroups and enantiomorphic subgroups of lowest index

IIc $[2] \bar{6}_2 22 (\mathbf{c}' = 2\mathbf{c}) (64)$; $[7] \bar{6}_4 22 (\mathbf{c}' = 7\mathbf{c}) (66)$

Minimal non-isotypic non-enantiomorphic supergroups

I none

II $[3] \bar{6} 222 (\mathbf{c}' = \frac{1}{3}\mathbf{c}) (62)$