

$\mu 6_2 22$

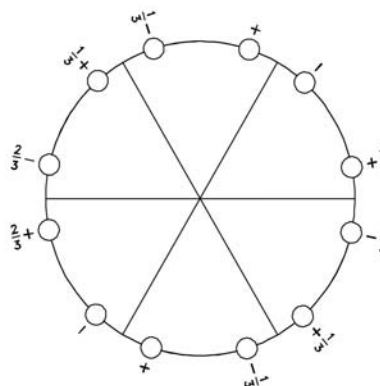
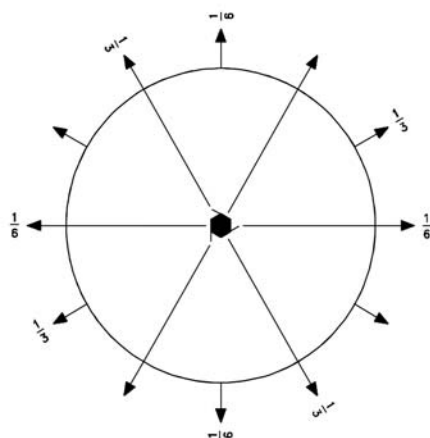
622

Hexagonal

No. 64

$\mu 6_2 22$

Patterson symmetry $\mu 6/mmm$



Origin on 222 at $6_2(2, 1, 1)(1, 2, 1)$

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

Symmetry operations

- | | | |
|-----------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------|
| (1) 1
(1 0, 0, 0) | (2) $3^+(\frac{2}{3})$ 0, 0, z
(3_z^- 0, 0, $\frac{2}{3}$) | (3) $3^-(\frac{1}{3})$ 0, 0, z
(3_z^- 0, 0, $\frac{1}{3}$) |
| (4) 2 0, 0, z
(2_z^- 0, 0, 0) | (5) $6^-(\frac{2}{3})$ 0, 0, z
(6_z^- 0, 0, $\frac{2}{3}$) | (6) $6^+(\frac{1}{3})$ 0, 0, z
(6_z^- 0, 0, $\frac{1}{3}$) |
| (7) 2 x, x, $\frac{1}{3}$
(2_{xy} 0, 0, $\frac{2}{3}$) | (8) 2 x, 0, 0
(2_x 0, 0, 0) | (9) 2 0, y, $\frac{1}{6}$
(2_y 0, 0, $\frac{1}{3}$) |
| (10) 2 x, \bar{x} , $\frac{1}{3}$
(2_z 0, 0, $\frac{2}{3}$) | (11) 2 x, 2x, 0
(2_2 0, 0, 0) | (12) 2 2x, x, $\frac{1}{6}$
(2_1 0, 0, $\frac{1}{3}$) |

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

Symmetry of special projections

Along [001] $6mm$

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

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

Origin at $0, 0, z$

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

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

Origin at $x, 0, 0$

Origin at $x, \frac{1}{2}x, \frac{1}{6}$

Maximal non-isotypic non-enantiomorphic subgroups

I	$[2]\bar{6}_2 11 (\bar{6}_2, 55)$	1; 2; 3; 4; 5; 6
	$[2]\bar{6}_2 3_2 21 (\bar{6}_2 3_2 12, 48)$	1; 2; 3; 7; 8; 9
	$[2]\bar{6}_2 3_2 12 (48)$	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 $[2]\bar{6}_2 6_2 22 (\mathbf{c}' = 2\mathbf{c}) (63)$

Maximal isotypic subgroups and enantiomorphic subgroups of lowest index

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

Minimal non-isotypic non-enantiomorphic supergroups

I none

II $[3]\bar{6} 6 22 (\mathbf{c}' = \frac{1}{3}\mathbf{c}) (62)$