

$\mu 6_5 22$

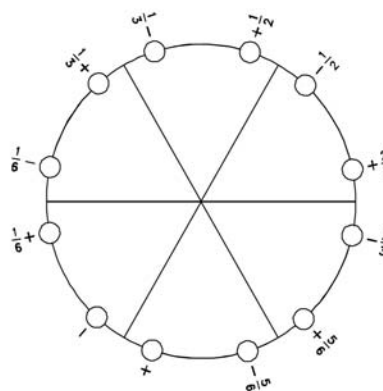
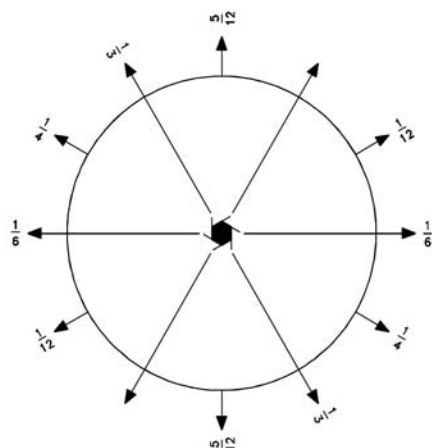
622

Hexagonal

No. 67

$\mu 6_5 22$

Patterson symmetry $\mu 6/mmm$



Origin on $2[100]$ at $6_5(2, 1, 1)$

Asymmetric unit $0 \leq z \leq \frac{1}{12}$

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^{-1} 0, 0, $\frac{1}{3}$) |
| (4) $2(\frac{1}{2})$ 0, 0, z
(2_z 0, 0, $\frac{1}{2}$) | (5) $6^-(\frac{1}{6})$ 0, 0, z
(6_z^{-1} 0, 0, $\frac{1}{6}$) | (6) $6^+(\frac{5}{6})$ 0, 0, z
(6_z 0, 0, $\frac{5}{6}$) |
| (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 $x, \bar{x}, \frac{1}{12}$
(2_3 0, 0, $\frac{1}{6}$) | (11) 2 $x, 2x, \frac{1}{4}$
(2_2 0, 0, $\frac{1}{2}$) | (12) 2 $2x, x, \frac{5}{12}$
(2_1 0, 0, $\frac{5}{6}$) |

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

Positions

Multiplicity, Wyckoff letter, Site symmetry	Coordinates						Reflection conditions
							General:
12 <i>c</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) $\bar{x}, \bar{y}, z + \frac{1}{2}$	(5) $y, \bar{x} + y, z + \frac{1}{6}$	(6) $x - y, x, z + \frac{5}{6}$	$l : l = 6n$
	(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) $\bar{y}, \bar{x}, \bar{z} + \frac{1}{6}$	(11) $\bar{x} + y, y, \bar{z} + \frac{1}{2}$	(12) $x, x - y, \bar{z} + \frac{5}{6}$	
							Special: as above, plus
6 <i>b</i> . . 2	$x, 2x, \frac{3}{4}$	$2\bar{x}, \bar{x}, \frac{5}{12}$	$x, \bar{x}, \frac{1}{12}$	$\bar{x}, 2\bar{x}, \frac{1}{4}$	$2x, x, \frac{11}{12}$	$\bar{x}, x, \frac{7}{12}$	$l : l = 2n$ or $l = 3n + 1$ or $l = 3n + 2$
6 <i>a</i> . 2 .	$x, 0, 0$	$0, x, \frac{2}{3}$	$\bar{x}, \bar{x}, \frac{1}{3}$	$\bar{x}, 0, \frac{1}{2}$	$0, \bar{x}, \frac{1}{6}$	$x, x, \frac{5}{6}$	$l : l = 2n$ or $l = 3n + 1$ or $l = 3n + 2$

Symmetry of special projections

Along [001] $6mm$

Along [100] $\cancel{6}2mg$

Along [210] $\cancel{6}2mg$

Origin at 0, 0, z

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

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

Origin at x, 0, 0

Origin at $x, \frac{1}{2}x, \frac{5}{12}$

Maximal non-isotypic non-enantiomorphic subgroups

I	[2] $\cancel{6}_5 11$ ($\cancel{6}_5, 58$)	1; 2; 3; 4; 5; 6
	[2] $\cancel{3}_2 21$ ($\cancel{3}_2 12, 48$)	1; 2; 3; 7; 8; 9
	[2] $\cancel{3}_2 12$ (48)	1; 2; 3; 10; 11; 12
	[3] $\cancel{2}_1 22$ ($\cancel{2}222_1, 14$)	1; 4; 7; 10
	[3] $\cancel{2}_1 22$ ($\cancel{2}222_1, 14$)	1; 4; 8; 11
	[3] $\cancel{2}_1 22$ ($\cancel{2}222_1, 14$)	1; 4; 9; 12

IIa none

IIb none

Maximal isotypic subgroups and enantiomorphic subgroups of lowest index

IIc [5] $\cancel{6}_1 22$ ($\mathbf{c}' = 5\mathbf{c}$) (63); [7] $\cancel{6}_5 22$ ($\mathbf{c}' = 7\mathbf{c}$) (67)

Minimal non-isotypic non-enantiomorphic supergroups

I none

II [2] $\cancel{6}_4 22$ ($\mathbf{c}' = \frac{1}{2}\mathbf{c}$) (66); [3] $\cancel{6}_3 22$ ($\mathbf{c}' = \frac{1}{3}\mathbf{c}$) (65)