

$\mu 6cc$

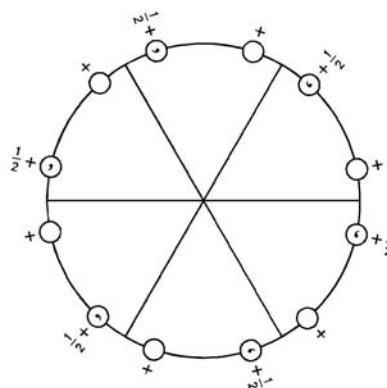
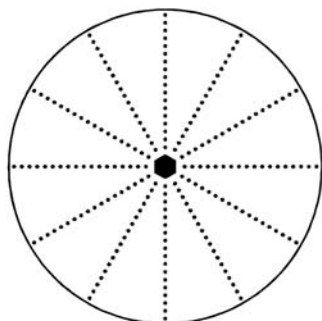
$6mm$

Hexagonal

No. 69

$\mu 6cc$

Patterson symmetry $\mu 6/mmm$



Origin on $6cc$

Asymmetric unit $0 \leq x; 0 \leq y; 0 \leq z \leq \frac{1}{2}; y \leq x$

Symmetry operations

- | | | |
|--|--|--|
| (1) 1
($1 0,0,0$) | (2) 3^+ $0,0,z$
($3_z 0,0,0$) | (3) 3^- $0,0,z$
($3_z^{-1} 0,0,0$) |
| (4) 2 $0,0,z$
($2_z 0,0,0$) | (5) 6^- $0,0,z$
($6_z^{-1} 0,0,0$) | (6) 6^+ $0,0,z$
($6_z 0,0,0$) |
| (7) c x, \bar{x}, z
($m_{xy} 0,0, \frac{1}{2}$) | (8) c $x, 2x, z$
($m_x 0,0, \frac{1}{2}$) | (9) c $2x, x, z$
($m_y 0,0, \frac{1}{2}$) |
| (10) c x, x, z
($m_3 0,0, \frac{1}{2}$) | (11) c $x, 0, z$
($m_2 0,0, \frac{1}{2}$) | (12) c $0, y, z$
($m_1 0,0, \frac{1}{2}$) |

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

Positions

Multiplicity,
Wyckoff letter,
Site symmetry

Coordinates

Reflection conditions

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

General:
 $l : l = 2n$

Special: no extra conditions

2 a 6.. 0,0,z 0,0,z + $\frac{1}{2}$

Symmetry of special projections

Along [001] $6mm$

Along [100] $\mu 11m$

Along [210] $\mu 11m$

Origin at 0,0,z

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

Origin at $x, 0, 0$

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

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

Maximal non-isotypic non-enantiomorphic subgroups

I	[2] $\mu 611$ ($\mu 6, 53$)	1; 2; 3; 4; 5; 6
	[2] $\mu 3c1$ (50)	1; 2; 3; 7; 8; 9
	[2] $\mu 31c$ ($\mu 3c1, 50$)	1; 2; 3; 10; 11; 12
	[3] $\mu 2cc$ ($\mu cc2, 16$)	1; 4; 7; 10
	[3] $\mu 2cc$ ($\mu cc2, 16$)	1; 4; 8; 11
	[3] $\mu 2cc$ ($\mu cc2, 16$)	1; 4; 9; 12

IIa none

IIb none

Maximal isotypic subgroups and enantiomorphic subgroups of lowest index

IIc [3] $\mu 6cc$ ($\mathbf{c}' = 3\mathbf{c}$) (69)

Minimal non-isotypic non-enantiomorphic supergroups

I [2] $\mu 6/mcc$ (74)

II [2] $\mu 6mm$ ($\mathbf{c}' = \frac{1}{2}\mathbf{c}$) (68)