

$\mu 6_3/m$

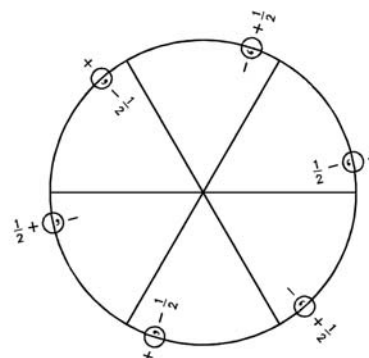
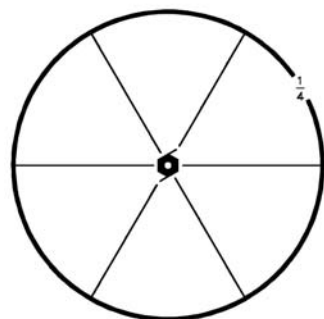
$6/m$

Hexagonal

No. 61

$\mu 6_3/m$

Patterson symmetry $\mu 6/m$



Origin at centre ($\bar{3}$) on 6_3

Asymmetric unit $0 \leq x; 0 \leq y; 0 \leq z \leq \frac{1}{4}$

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

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

Positions

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

Symmetry of special projections

Along [001] 6	Along [100] $\bar{6}2mg$	Along [210] $\bar{6}2mg$
	$\mathbf{a}' = \mathbf{c}$	$\mathbf{a}' = \mathbf{c}$
Origin at $0, 0, z$	Origin at $x, 0, 0$	Origin at $x, \frac{1}{2}x, 0$

Maximal non-isotypic non-enantiomorphic subgroups

I	$[2]\bar{6}$ (59)	1; 2; 3; 10; 11; 12
	$[2]\bar{6}_3$ (56)	1; 2; 3; 4; 5; 6
	$[2]\bar{3}$ (45)	1; 2; 3; 7; 8; 9
	$[3]\bar{1}12_1/m$ (12)	1; 4; 7; 10

IIa none

IIb none

Maximal isotypic subgroups and enantiomorphic subgroups of lowest index

IIc $[3]\bar{6}_3/m$ ($\mathbf{c}' = 3\mathbf{c}$) (61)

Minimal non-isotypic non-enantiomorphic supergroups

I $[2]\bar{6}_3/mmc$ (75)

II $[2]\bar{6}/m$ ($\mathbf{c}' = \frac{1}{2}\mathbf{c}$) (60)