

$\mu 6mm$

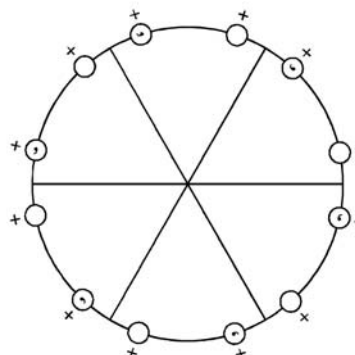
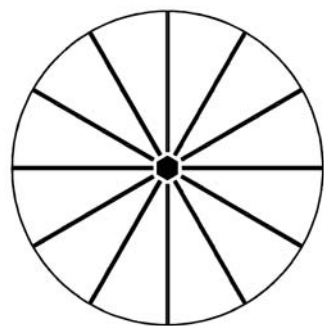
$6mm$

Hexagonal

No. 68

$\mu 6mm$

Patterson symmetry  $\mu 6/mmm$



**Origin** on  $6mm$

**Asymmetric unit**  $0 \leq x; 0 \leq y; 0 \leq z \leq 1; y \leq x/2$

**Symmetry operations**

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

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

**Positions**

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

**Symmetry of special projections**

Along [001]  $6mm$

Along [100]  $\mu 11m$

Along [210]  $\mu 11m$

Origin at  $0, 0, z$

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

Origin at  $x, 0, 0$

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

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

**Maximal non-isotypic non-enantiomorphic subgroups**

<b>I</b>	$[2]\mu 611 (\mu 6, 53)$	1; 2; 3; 4; 5; 6
	$[2]\mu 3m1 (49)$	1; 2; 3; 7; 8; 9
	$[2]\mu 31m (\mu 3m1, 49)$	1; 2; 3; 10; 11; 12
	$[3]\mu 2mm (\mu mm2, 15)$	1; 4; 7; 10
	$[3]\mu 2mm (\mu mm2, 15)$	1; 4; 8; 11
	$[3]\mu 2mm (\mu mm2, 15)$	1; 4; 9; 12

**IIa** none

**IIb**  $[2]\mu 6_3mc (\mathbf{c}' = 2\mathbf{c}) (70)$ ;  $[2]\mu 6_3cm (\mathbf{c}' = 2\mathbf{c}) (\mu 6_3mc, 70)$ ;  $[2]\mu 6cc (\mathbf{c}' = 2\mathbf{c}) (69)$

**Maximal isotypic subgroups and enantiomorphic subgroups of lowest index**

**IIc**  $[2]\mu 6mm (\mathbf{c}' = 2\mathbf{c}) (68)$

**Minimal non-isotypic non-enantiomorphic supergroups**

**I**  $[2]\mu 6/mmm (73)$

**II** none