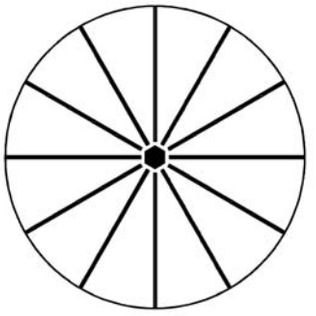
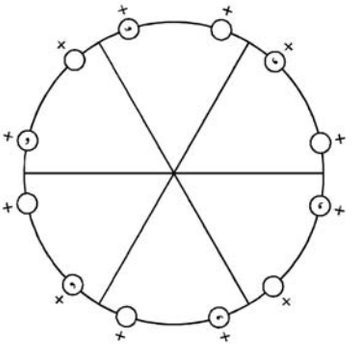
$\not{p}6mm$ $6mm$ Hexagonal

No. 68 $\not{p}6mm$ Patterson symmetry $\not{p}6/mmm$





Origin on $6mm$

Asymmetric unit $0 \le x; \quad 0 \le y; \quad 0 \le z \le 1; \quad y \le x/2$

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) m $x,\bar{x},z$ $(m_{xy}\|0,0,0)$	(8) m $x,2x,z$ $(m_x\|0,0,0)$	(9) m $2x,x,z$ $(m_y\|0,0,0)$
(10) m x,x,z $(m_3\|0,0,0)$	(11) m $x,0,z$ $(m_2\|0,0,0)$	(12) m $0,y,z$ $(m_1\|0,0,0)$

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

Positions

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

Symmetry of special projections

Along [001] $6mm$
Origin at $0,0,z$

Along [100] $\not{p}11m$
$\mathbf{a}' = \mathbf{c}$
Origin at $x,0,0$

Along [210] $\not{p}11m$
$\mathbf{a}' = \mathbf{c}$
Origin at $x,\frac{1}{2}x,0$

Maximal non-isotypic non-enantiomorphic subgroups

I [2] $\not{p}611$ ($\not{p}6$, 53) 1; 2; 3; 4; 5; 6
[2] $\not{p}3m1$ (49) 1; 2; 3; 7; 8; 9
[2] $\not{p}31m$ ($\not{p}3m1$, 49) 1; 2; 3; 10; 11; 12
[3] $\not{p}2mm$ ($\not{p}mm2$, 15) 1; 4; 7; 10
[3] $\not{p}2mm$ ($\not{p}mm2$, 15) 1; 4; 8; 11
[3] $\not{p}2mm$ ($\not{p}mm2$, 15) 1; 4; 9; 12

IIa none

IIb [2] $\not{p}6_3mc$ ($\mathbf{c}' = 2\mathbf{c}$) (70); [2] $\not{p}6_3cm$ ($\mathbf{c}' = 2\mathbf{c}$) ($\not{p}6_3mc$, 70); [2] $\not{p}6cc$ ($\mathbf{c}' = 2\mathbf{c}$) (69)

Maximal isotypic subgroups and enantiomorphic subgroups of lowest index

IIc [2] $\not{p}6mm$ ($\mathbf{c}' = 2\mathbf{c}$) (68)

Minimal non-isotypic non-enantiomorphic supergroups

I [2] $\not{p}6/mmm$ (73)

II none