

D_{2h}^{28}
 $I2_1/m2_1/m2_1/a$

No. 74

 $Imma$
Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; $t(\frac{1}{2},\frac{1}{2},\frac{1}{2})$; (2); (3); (5)

General position

 Multiplicity,
Wyckoff letter,
Site symmetry

Coordinates

 $(0,0,0)+$ $(\frac{1}{2},\frac{1}{2},\frac{1}{2})+$

 16 j 1

 (1) x,y,z (2) $\bar{x},\bar{y}+\frac{1}{2},z$ (3) $\bar{x},y+\frac{1}{2},\bar{z}$ (4) x,\bar{y},\bar{z}
 (5) \bar{x},\bar{y},\bar{z} (6) $x,y+\frac{1}{2},\bar{z}$ (7) $x,\bar{y}+\frac{1}{2},z$ (8) \bar{x},y,z
I Maximal translationengleiche subgroups

[2] $Im2b$ (46, $Ima2$)	(1; 3; 6; 8)+	–a, c, b	1/4, 0, 1/4
[2] $I2mb$ (46, $Ima2$)	(1; 4; 6; 7)+	b, c, a	
[2] $Imm2$ (44)	(1; 2; 7; 8)+		0, 1/4, 0
[2] $I2_12_12_1$ (24)	(1; 2; 3; 4)+		0, 0, 1/4
[2] $I112/b$ (15, $A112/a$)	(1; 2; 5; 6)+	b, –a – b, c	
[2] $I12/m1$ (12, $C12/m1$)	(1; 3; 5; 7)+	–a – c, b, a	1/4, 1/4, 1/4
[2] $I2/m11$ (12, $C12/m1$)	(1; 4; 5; 8)+	–b – c, a, c	

II Maximal klassengleiche subgroups

• Loss of centring translations

[2] $Pnma$ (62)	1; 3; 5; 7; (2; 4; 6; 8) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$		
[2] $Pmnb$ (62, $Pnma$)	1; 3; 6; 8; (2; 4; 5; 7) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$	–b, a, c	1/4, 1/4, 1/4
[2] $Pnmb$ (53, $Pmna$)	1; 4; 6; 7; (2; 3; 5; 8) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$	–b, a, c	1/4, 1/4, 1/4
[2] $Pmna$ (53)	1; 4; 5; 8; (2; 3; 6; 7) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$		
[2] $Pnna$ (52)	1; 2; 3; 4; (5; 6; 7; 8) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$		1/4, 1/4, 1/4
[2] $Pnnb$ (52, $Pnna$)	1; 2; 5; 6; (3; 4; 7; 8) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$	–b, a, c	
[2] $Pmma$ (51)	1; 2; 7; 8; (3; 4; 5; 6) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$		1/4, 1/4, 1/4
[2] $Pmmb$ (51, $Pmma$)	1; 2; 3; 4; 5; 6; 7; 8	–b, a, c	

• Enlarged unit cell

[3] $a' = 3a$			
$\left\{ \begin{array}{l} Imma (74) \\ Imma (74) \\ Imma (74) \end{array} \right.$	$\langle 2; 3; 5 \rangle$ $\langle (2; 3; 5) + (2, 0, 0) \rangle$ $\langle (2; 3; 5) + (4, 0, 0) \rangle$	3a, b, c 3a, b, c 3a, b, c	1, 0, 0 2, 0, 0
[3] $b' = 3b$			
$\left\{ \begin{array}{l} Imma (74) \\ Imma (74) \\ Imma (74) \end{array} \right.$	$\langle 5; (2; 3) + (0, 1, 0) \rangle$ $\langle 2 + (0, 3, 0); 3 + (0, 1, 0); 5 + (0, 2, 0) \rangle$ $\langle 2 + (0, 5, 0); 3 + (0, 1, 0); 5 + (0, 4, 0) \rangle$	a, 3b, c a, 3b, c a, 3b, c	0, 1, 0 0, 2, 0
[3] $c' = 3c$			
$\left\{ \begin{array}{l} Imma (74) \\ Imma (74) \\ Imma (74) \end{array} \right.$	$\langle 2; 3; 5 \rangle$ $\langle 2; (3; 5) + (0, 0, 2) \rangle$ $\langle 2; (3; 5) + (0, 0, 4) \rangle$	a, b, 3c a, b, 3c a, b, 3c	0, 0, 1 0, 0, 2

• Series of maximal isomorphic subgroups

[p] $a' = pa$			
$Imma (74)$	$\langle (2; 3; 5) + (2u, 0, 0) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	pa, b, c	$u, 0, 0$
[p] $b' = pb$			
$Imma (74)$	$\langle 2 + (0, \frac{p}{2} - \frac{1}{2} + 2u, 0); 3 + (0, \frac{p}{2} - \frac{1}{2}, 0); 5 + (0, 2u, 0) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	a, pb, c	$0, u, 0$
[p] $c' = pc$			
$Imma (74)$	$\langle 2; (3; 5) + (0, 0, 2u) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	a, b, pc	$0, 0, u$

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I Minimal translationengleiche supergroups[2] $I4_1/acd$ (142); [2] $Ia\bar{3}$ (206)**II Minimal non-isomorphic klassengleiche supergroups**

- Additional centring translations none

- Decreased unit cell

[2] $\mathbf{a}' = \frac{1}{2}\mathbf{a}$ $Aemm$ (67, $Cmme$); [2] $\mathbf{b}' = \frac{1}{2}\mathbf{b}$ $Bmem$ (67, $Cmme$); [2] $\mathbf{c}' = \frac{1}{2}\mathbf{c}$ $Cmme$ (67)**I Minimal translationengleiche supergroups**[2] $I4_1/amd$ (141)**II Minimal non-isomorphic klassengleiche supergroups**

- Additional centring translations none

- Decreased unit cell

[2] $\mathbf{a}' = \frac{1}{2}\mathbf{a}$ $Ammm$ (65, $Cmmm$); [2] $\mathbf{b}' = \frac{1}{2}\mathbf{b}$ $Bmmm$ (65, $Cmmm$); [2] $\mathbf{c}' = \frac{1}{2}\mathbf{c}$ $Cmme$ (67)