

D_{2d}^{11}
 $I\bar{4}2m$

No. 121

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

 [2] $I\bar{4}11$ (82, $I\bar{4}$) (1; 2; 3; 4)+
 [2] $I21m$ (42, $Fmm2$) (1; 2; 7; 8)+
 [2] $I221$ (23, $I222$) (1; 2; 5; 6)+

 $\mathbf{a-b, a+b, c}$
II Maximal klassengleiche subgroups

• Loss of centring translations

 [2] $P\bar{4}2_1c$ (114) 1; 2; 3; 4; (5; 6; 7; 8) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$
 [2] $P\bar{4}2_1m$ (113) 1; 2; 7; 8; (3; 4; 5; 6) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$ 0, 1/2, 1/4
 [2] $P\bar{4}2c$ (112) 1; 2; 5; 6; (3; 4; 7; 8) + $(\frac{1}{2}, \frac{1}{2}, \frac{1}{2})$ 0, 1/2, 1/4
 [2] $P\bar{4}2m$ (111) 1; 2; 3; 4; 5; 6; 7; 8

• Enlarged unit cell

 [3] $\mathbf{c}' = 3\mathbf{c}$
 $\left\{ \begin{array}{l} I\bar{4}2m$ (121) $\langle 2; 3; 5 \rangle$ $\mathbf{a, b, 3c}$
 $I\bar{4}2m$ (121) $\langle 2; (3; 5) + (0, 0, 2) \rangle$ $\mathbf{a, b, 3c}$ 0, 0, 1
 $I\bar{4}2m$ (121) $\langle 2; (3; 5) + (0, 0, 4) \rangle$ $\mathbf{a, b, 3c}$ 0, 0, 2
 \end{array} \right.

• Series of maximal isomorphic subgroups

 [p] $\mathbf{c}' = p\mathbf{c}$
 $I\bar{4}2m$ (121) $\langle 2; (3; 5) + (0, 0, 2u) \rangle$ $\mathbf{a, b, pc}$ 0, 0, u
 $p > 2; 0 \leq u < p$
 p conjugate subgroups for the prime p
 [p²] $\mathbf{a}' = p\mathbf{a}, \mathbf{b}' = p\mathbf{b}$
 $I\bar{4}2m$ (121) $\langle 2 + (2u, 2v, 0); 3 + (u - v, u + v, 0); 5 + (2u, 0, 0) \rangle$ $p\mathbf{a}, p\mathbf{b}, \mathbf{c}$ $u, v, 0$
 $p > 2; 0 \leq u < p; 0 \leq v < p$
 p^2 conjugate subgroups for the prime p
I Minimal translationengleiche supergroups

 [2] $I4/mmm$ (139); [2] $I4/mcm$ (140); [3] $I\bar{4}3m$ (217)

II Minimal non-isomorphic klassengleiche supergroups

• Additional centring translations

none

• Decreased unit cell

 [2] $\mathbf{c}' = \frac{1}{2}\mathbf{c}$ $C\bar{4}2m$ (115, $P\bar{4}m2$)