

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

| | | | | | | | | | |
|----|----------|---|---------------------------|--|---------------------------|---------------------------|--|--|--|
| | | | | | | | | | |
| 16 | <i>j</i> | 1 | (0,0,0)+ | $(\frac{1}{2},\frac{1}{2},\frac{1}{2})+$ | | | | | |
| | | | (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)+ | a – b, a + b, c |
| [2] $I221$ (23, $I222$) | (1; 2; 5; 6)+ | |

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] $\mathbf{c}' = 3\mathbf{c}$ | | | |
| { | $I\bar{4}2m$ (121) | $\langle 2; 3; 5 \rangle$ | a, b, 3c |
| | $I\bar{4}2m$ (121) | $\langle 2; (3; 5) + (0, 0, 2) \rangle$ | a, b, 3c |
| | $I\bar{4}2m$ (121) | $\langle 2; (3; 5) + (0, 0, 4) \rangle$ | a, b, 3c |
| | | | 0, 0, 1 |
| | | | 0, 0, 2 |

• Series of maximal isomorphic subgroups

| | | | |
|--|--------------------|--|------------------|
| [<i>p</i>] $\mathbf{c}' = p\mathbf{c}$ | | | |
| { | $I\bar{4}2m$ (121) | $\langle 2; (3; 5) + (0, 0, 2u) \rangle$ | a, b, pc |
| | | prime $p > 2$; $0 \leq u < p$ | 0, 0, <i>u</i> |
| | | <i>p</i> conjugate subgroups | |
| [<i>p</i> ²] $\mathbf{a}' = p\mathbf{a}, \mathbf{b}' = p\mathbf{b}$ | | | |
| { | $I\bar{4}2m$ (121) | $\langle 2 + (2u, 2v, 0); 3 + (u - v, u + v, 0); 5 + (2u, 0, 0) \rangle$ | pa, pb, c |
| | | prime $p > 2$; $0 \leq u < p$; $0 \leq v < p$ | <i>u, v, 0</i> |
| | | <i>p</i> ² conjugate subgroups | |

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, $P\bar{4}m2$)