

$I4_1cd$

No. 110

 C_{4v}^{12}

Axes	Coordinates	Wyckoff positions	
		$8a$	$16b$
I Maximal translationengleiche subgroups			
[2] $I4_1$ (80)		$2 \times 4a$	$2 \times 8b$
[2] $Iba2$ (45)		$4a; 4b$	$2 \times 8c$
[2] $Fdd2$ (43)	$\mathbf{a-b, a+b, c}$ $\frac{1}{2}(x-y), \frac{1}{2}(x+y), z$	$2 \times 8a$	$2 \times 16b$
II Maximal klassengleiche subgroups			
Enlarged unit cell, isomorphic			
[3] $I4_1cd$	$\mathbf{b, -a, 3c}$ $y, -x, \frac{1}{3}z; \pm(0, 0, \frac{1}{3})$	$3 \times 8a$	$3 \times 16b$
[p] $I4_1cd$	$\mathbf{b, -a, pc}$ $y, -x, \frac{1}{p}z; + (0, 0, \frac{u}{p})$ $p = \text{prime} = 4n - 1; u = 0, \dots, p - 1$	$p \times 8a$	$p \times 16b$
[5] $I4_1cd$	$\mathbf{a, b, 5c}$ $x, y, \frac{1}{5}z; \pm(0, 0, \frac{1}{5}); \pm(0, 0, \frac{2}{5})$	$5 \times 8a$	$5 \times 16b$
[p] $I4_1cd$	$\mathbf{a, b, pc}$ $x, y, \frac{1}{p}z; + (0, 0, \frac{u}{p})$ $p = \text{prime} = 4n + 1; u = 0, \dots, p - 1$	$p \times 8a$	$p \times 16b$
[9] $I4_1cd$	$\mathbf{3a, 3b, c}$ $\frac{1}{3}x, \frac{1}{3}y, z; \pm(\frac{1}{3}, 0, 0); \pm(0, \frac{1}{3}, 0);$ $\pm(\frac{1}{3}, \frac{1}{3}, 0); \pm(\frac{1}{3}, \frac{2}{3}, 0)$	$8a; 4 \times 16b$	$9 \times 16b$
[p^2] $I4_1cd$	$\mathbf{pa, pb, c}$ $\frac{1}{p}x, \frac{1}{p}y, z; + (\frac{u}{p}, \frac{v}{p}, 0)$ $p = \text{prime} > 2; u, v = 1, \dots, p - 1$	$8a; \frac{1}{2}(p^2 - 1) \times 16b$	$p^2 \times 16b$

 $P\bar{4}2m$

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Axes	Coordinates	Wyckoff positions					
		$1a$	$1b$	$1c$	$1d$	$2e$	$2f$
			$2g$	$2h$	$4i$	$4j$	$4k$
				$4l$	$4m$	$4n$	$8o$
[p] $P\bar{4}2m$	$\mathbf{a, b, pc}$ $x, y, \frac{1}{p}z; + (0, 0, \frac{u}{p})$ $p = \text{prime} > 2;$ $u = 1, \dots, p - 1$	$1a; \frac{p-1}{2} \times 2g$	$1b; \frac{p-1}{2} \times 2h$ $p \times 2g$	$1c; \frac{p-1}{2} \times 2g$ $p \times 2h$ $4l; \frac{p-1}{2} \times 8o$	$1d; \frac{p-1}{2} \times 2h$ $4i; \frac{p-1}{2} \times 8o$ $p \times 4m$	$2e; \frac{p-1}{2} \times 4m$ $4j; \frac{p-1}{2} \times 8o$ $p \times 4n$	$2f; \frac{p-1}{2} \times 4m$ $4k; \frac{p-1}{2} \times 8o$ $p \times 8o$
[9] $P\bar{4}2m$	$\mathbf{3a, 3b, c}$ $\frac{1}{3}x, \frac{1}{3}y, z;$ $\pm(\frac{1}{3}, 0, 0); \pm(0, \frac{1}{3}, 0);$ $\pm(\frac{1}{3}, \frac{1}{3}, 0); \pm(\frac{1}{3}, \frac{2}{3}, 0)$	$1a; 4i; 4n$	$1b; 4j; 4n$ $2g; 2 \times 4n; 8o$	$1c; 4k; 4n$ $2h; 2 \times 4n; 8o$ $3 \times 4l; 3 \times 8o$	$1d; 4l; 4n$ $3 \times 4i; 3 \times 8o$ $4m; 4 \times 8o$	$2e; 4i; 4l; 8o$ $3 \times 4j; 3 \times 8o$ $3 \times 4n; 3 \times 8o$	$2f; 4j; 4k; 8o$ $3 \times 4k; 3 \times 8o$ $9 \times 8o$
[p^2] $P\bar{4}2m$	$\mathbf{pa, pb, c}$ $\frac{1}{p}x, \frac{1}{p}y, z; + (\frac{u}{p}, \frac{v}{p}, 0)$ $p = \text{prime} > 2;$ $u, v = 1, \dots, p - 1$	$1a; \frac{p-1}{2} \times 4i;$ $\frac{p-1}{2} \times 4n;$ $\frac{(p-1)(p-3)}{8} \times 8o$	$1b; \frac{p-1}{2} \times 4j;$ $\frac{p-1}{2} \times 4n;$ $\frac{(p-1)(p-3)}{8} \times 8o$ $2g; (p-1) \times 4n;$ $\frac{(p-1)^2}{4} \times 8o$	$1c; \frac{p-1}{2} \times 4k;$ $\frac{p-1}{2} \times 4n;$ $\frac{(p-1)(p-3)}{8} \times 8o$ $2h; (p-1) \times 4n;$ $\frac{(p-1)^2}{4} \times 8o$ $p \times 4l;$ $\frac{p(p-1)}{2} \times 8o$	$1d; \frac{p-1}{2} \times 4l;$ $\frac{p-1}{2} \times 4n;$ $\frac{(p-1)(p-3)}{8} \times 8o$ $p \times 4i;$ $\frac{p(p-1)}{2} \times 8o$ $4m; \frac{p^2-1}{2} \times 8o$	$2e; \frac{p-1}{2} \times 4i;$ $\frac{p-1}{2} \times 4l;$ $\frac{(p-1)^2}{4} \times 8o$ $p \times 4j;$ $\frac{p(p-1)}{2} \times 8o$ $p \times 4n;$ $\frac{p(p-1)}{2} \times 8o$	$2f; \frac{p-1}{2} \times 4j;$ $\frac{p-1}{2} \times 4k;$ $\frac{(p-1)^2}{4} \times 8o$ $p \times 4k;$ $\frac{p(p-1)}{2} \times 8o$ $p^2 \times 8o$