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$P4_2/nnm$ No. 134 $P4_2/n2/n2/m$ D_{4h}^{12}

	Axes	Coordinates origin 1	Coordinates origin 2	Wyckoff positions $2a$	$2b$	$4c$ / $8i$	$4d$ / $8j$	$4e$ / $8k$	$4f$ / $8l$	$4g$ / $8m$	$8h$ / $16n$
I Maximal *translationengleiche* subgroups											
[2] $P\bar{4}n2$ (118)			$x+\frac{1}{4},y-\frac{1}{4},z+\frac{1}{4}$	$2a$	$2b$	$4h$ / $8i$	$2c;2d$ / $8i$	$4f$ / $2\times4g$	$4g$ / $2\times4f$	$4e$ / $8i$	$2\times4h$ / $2\times8i$
[2] $P\bar{4}2m$ (111)			$x+\frac{1}{4},y-\frac{1}{4},z+\frac{1}{4}$	$1a;1b$	$1c;1d$	$2e;2f$ / $4i;4j$	$4m$ / $4k;4l$	$4n$ / $8o$	$4n$ / $8o$	$2g;2h$ / $2\times4n$	$2\times4m$ / $2\times8o$
[2] $P4_2nm$ (102)			$x+\frac{1}{4},y-\frac{1}{4},z$	$2a$	$2a$	$4b$ / $8d$	$4b$ / $8d$	$4c$ / $8d$	$4c$ / $8d$	$2\times2a$ / $2\times4c$	$2\times4b$ / $2\times8d$
[2] $P4_222$ (93)		$x,y+\frac{1}{2},z$	$x+\frac{1}{4},y+\frac{1}{4},z+\frac{1}{4}$	$2c$	$2d$	$2a;2b$ / $4l;4m$	$2e;2f$ / $4j;4k$	$4o$ / $2\times4n$	$4n$ / $2\times4o$	$4i$ / $8p$	$4g;4h$ / $2\times8p$
[2] $P4_2/n$ (86)			$x,y+\frac{1}{2},z$	$2a$	$2b$	$4e$ / $8g$	$4e$ / $8g$	$4c$ / $8g$	$4d$ / $8g$	$4f$ / $8g$	$2\times4e$ / $2\times8g$
[2] $Pnnn$ (48)				$2a(d^*)$	$2c(b^*)$	$2b(a^*);2d(c^*)$ / $4g(h^*);4i$	$4l(k^*)$ / $4h(g^*);4j$	$4e$ / $8m$	$4f$ / $8m$	$4k(l^*)$ / $8m$	$2\times4l(k^*)$ / $2\times8m$
[2] $Cmme$ (67)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b}$, $\mathbf{c}$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y)+\frac{1}{4},z-\frac{1}{4}$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),z$	$4g$	$4g$	$8l$ / $16o$	$4a;4b$ / $16o$	$4d;4e$ / $8h;8k$	$4c;4f$ / $8i;8j$	$2\times4g$ / $8m;8n$	$2\times8l$ / $2\times16o$
II Maximal *klassengleiche* subgroups											
Enlarged unit cell, non-isomorphic											
[2] $I4_1/acd$ (142)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b},2\mathbf{c}$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),\frac{1}{2}z$; $+(0,0,\frac{1}{2})$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),\frac{1}{2}z$; $+(0,0,\frac{1}{2})$	$8a$	$8b$	$16f$ / $32g$	$16e$ / $2\times16f$	$16e$ / $32g$	$16c$ / $2\times16e$	$16d$ / $32g$	$32g$ / $2\times32g$
[2] $I4_1/acd$ (142)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b},2\mathbf{c}$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),\frac{1}{2}z+\frac{1}{4}$; $+(0,0,\frac{1}{2})$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),\frac{1}{2}z+\frac{1}{4}$; $+(0,0,\frac{1}{2})$	$8b$	$8a$	$16f$ / $2\times16f$	$16e$ / $32g$	$16c$ / $2\times16e$	$16e$ / $32g$	$16d$ / $32g$	$32g$ / $2\times32g$
[2] $I4_1/acd$ (142)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b},2\mathbf{c}$	$\frac{1}{2}(x+y)+\frac{1}{2}$, $\frac{1}{2}(-x+y),\frac{1}{2}z$; $+(0,0,\frac{1}{2})$	$\frac{1}{2}(x+y)+\frac{1}{2}$, $\frac{1}{2}(-x+y),\frac{1}{2}z$; $+(0,0,\frac{1}{2})$	$8b$	$8a$	$16f$ / $2\times16f$	$16e$ / $32g$	$16e$ / $32g$	$16c$ / $2\times16e$	$16d$ / $32g$	$32g$ / $2\times32g$
[2] $I4_1/acd$ (142)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b},2\mathbf{c}$	$\frac{1}{2}(x+y)+\frac{1}{2}$, $\frac{1}{2}(-x+y),\frac{1}{2}z+\frac{1}{4}$; $+(0,0,\frac{1}{2})$	$\frac{1}{2}(x+y)+\frac{1}{2}$, $\frac{1}{2}(-x+y),\frac{1}{2}z+\frac{1}{4}$; $+(0,0,\frac{1}{2})$	$8a$	$8b$	$16f$ / $32g$	$16e$ / $2\times16f$	$16e$ / $2\times16e$	$16e$ / $32g$	$16d$ / $32g$	$32g$ / $2\times32g$
[2] $I4_1/amd$ (141)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b},2\mathbf{c}$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),\frac{1}{2}z$; $+(0,0,\frac{1}{2})$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),\frac{1}{2}z$; $+(0,0,\frac{1}{2})$	$4a;4b$	$8e$	$16g$ / $2\times16g$	$16f$ / $32i$	$16h$ / $2\times16f$	$8c;8d$ / $32i$	$2\times8e$ / $2\times16h$	$32i$ / $2\times32i$
[2] $I4_1/amd$ (141)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b},2\mathbf{c}$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),\frac{1}{2}z+\frac{1}{4}$; $+(0,0,\frac{1}{2})$	$\frac{1}{2}(x+y)$, $\frac{1}{2}(-x+y),\frac{1}{2}z+\frac{1}{4}$; $+(0,0,\frac{1}{2})$	$8e$	$4a;4b$	$16g$ / $32i$	$16f$ / $2\times16g$	$8c;8d$ / $32i$	$16h$ / $2\times16f$	$2\times8e$ / $2\times16h$	$32i$ / $2\times32i$
[2] $I4_1/amd$ (141)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b},2\mathbf{c}$	$\frac{1}{2}(x+y)+\frac{1}{2}$, $\frac{1}{2}(-x+y),\frac{1}{2}z$; $+(0,0,\frac{1}{2})$	$\frac{1}{2}(x+y)+\frac{1}{2}$, $\frac{1}{2}(-x+y),\frac{1}{2}z$; $+(0,0,\frac{1}{2})$	$8e$	$4a;4b$	$16g$ / $32i$	$16f$ / $2\times16g$	$16h$ / $2\times16f$	$8c;8d$ / $32i$	$2\times8e$ / $2\times16h$	$32i$ / $2\times32i$
[2] $I4_1/amd$ (141)	$\mathbf{a}+\mathbf{b}$, $-\mathbf{a}+\mathbf{b},2\mathbf{c}$	$\frac{1}{2}(x+y)+\frac{1}{2}$, $\frac{1}{2}(-x+y),\frac{1}{2}z+\frac{1}{4}$; $+(0,0,\frac{1}{2})$	$\frac{1}{2}(x+y)+\frac{1}{2}$, $\frac{1}{2}(-x+y),\frac{1}{2}z+\frac{1}{4}$; $+(0,0,\frac{1}{2})$	$4a;4b$	$8e$	$16g$ / $2\times16g$	$16f$ / $32i$	$8c;8d$ / $32i$	$16h$ / $2\times16f$	$2\times8e$ / $2\times16h$	$32i$ / $2\times32i$

* origin 2

	Axes	Coordinates origin 1	Coordinates origin 2	Wyckoff positions $2a$	$2b$	$4c$	$4d$	$4e$
				$4f$	$4g$	$8h$	$8i$	$8j$
					$8k$	$8l$	$8m$	$16n$
Enlarged unit cell, isomorphic								
[3] $P4_2/nnm$	**a**, **b**, 3**c**	$x,y,\frac{1}{3}z$; $\pm(0,0,\frac{1}{3})$	$x,y,\frac{1}{3}z$; $\pm(0,0,\frac{1}{3})$	$2a(b^*)$; $4g$ $4e(f^*)$; $8m$	$2b(a^*)$; $4g$ $3\times4g$ $8l(k^*)$; $16n$	$4c$; $8h$ $3\times8h$ $8k(l^*)$; $16n$	$4d$; $8h$ $8i(j^*)$; $16n$ $3\times8m$	$4f(e^*)$; $8m$ $8j(i^*)$; $16n$ $3\times16n$
[p] $P4_2/nnm$	**a**, **b**, p**c**	$x,y,\frac{1}{p}z$; $+(0,0,\frac{u}{p})$ $p=$prime >2; $u=1,\dots,p-1$	$x,y,\frac{1}{p}z$; $+(0,0,\frac{u}{p})$	$2a(b^\dagger)$; $\frac{p-1}{2}\times4g$ $4f(e^\ddagger)$; $\frac{p-1}{2}\times8m$	$2b(a^\dagger)$; $\frac{p-1}{2}\times4g$ $p\times4g$ $8k(l^\ddagger)$; $\frac{p-1}{2}\times16n$	$4c$; $\frac{p-1}{2}\times8h$ $p\times8h$ $8l(k^\ddagger)$; $\frac{p-1}{2}\times16n$	$4d$; $\frac{p-1}{2}\times8h$ $8i(j^\dagger)$; $\frac{p-1}{2}\times16n$ $p\times8m$	$4e(f^\ddagger)$; $\frac{p-1}{2}\times8m$ $8j(i^\dagger)$; $\frac{p-1}{2}\times16n$ $p\times16n$
[9] $P4_2/nnm$	3**a**,3**b**,**c**	$\underbrace{\frac{1}{3}x,\frac{1}{3}y,z;}$ $\pm(\frac{1}{3},0,0)$; $\pm(0,\frac{1}{3},0)$; $\pm(\frac{1}{3},\frac{1}{3},0)$; $\pm(\frac{1}{3},\frac{2}{3},0)$	$\underbrace{\frac{1}{3}x,\frac{1}{3}y,z;}$	$2a(b^*)$; $8i(j^*)$; $8m$ $4f$; $8k$; $8m$; $16n$	$2b(a^*)$; $8j(i^*)$; $8m$ $4g$; $2\times8m$; $16n$ $3\times8k$; $3\times16n$	$4c$; $8i$; $8j$; $16n$ $8h$; $4\times16n$ $3\times8l$; $3\times16n$	$4d$; $8k$; $8l$; $16n$ $3\times8i(j^*)$; $3\times16n$ $3\times8m$; $3\times16n$	$4e$; $8l$; $8m$; $16n$ $3\times8j(i^*)$; $3\times16n$ $9\times16n$
[p^2] $P4_2/nnm$	p**a**,p**b**,**c**	$\frac{1}{p}x,\frac{1}{p}y,z$; $+(\frac{u}{p},\frac{v}{p},0)$ $p=$ prime >2; $u,v=1,\dots,p-1$	$\frac{1}{p}x,\frac{1}{p}y,z$; $+(\frac{u}{p},\frac{v}{p},0)$	$2a(b^\dagger)$; $\frac{p-1}{2}\times8i(j^\dagger)$; $\frac{p-1}{2}\times8m$; $\frac{(p-1)(p-3)}{8}\times16n$ $4f$; $\frac{p-1}{2}\times8k$; $\frac{p-1}{2}\times8m$; $\frac{(p-1)^2}{4}\times16n$	$2b(a^\dagger)$; $\frac{p-1}{2}\times8j(i^\dagger)$; $\frac{p-1}{2}\times8m$; $\frac{(p-1)(p-3)}{8}\times16n$ $4g$; $(p-1)\times8m$; $\frac{(p-1)^2}{4}\times16n$ $p\times8k$; $\frac{p(p-1)}{2}\times16n$	$4c$; $\frac{p-1}{2}\times8i$; $\frac{p-1}{2}\times8j$; $\frac{(p-1)^2}{4}\times16n$ $8h$; $\frac{p^2-1}{2}\times16n$ $p\times8l$; $\frac{p(p-1)}{2}\times16n$	$4d$; $\frac{p-1}{2}\times8k$; $\frac{p-1}{2}\times8l$; $\frac{(p-1)^2}{4}\times16n$ $p\times8i(j^\dagger)$; $\frac{p(p-1)}{2}\times16n$ $p\times8m$; $\frac{p(p-1)}{2}\times16n$	$4e$; $\frac{p-1}{2}\times8l$; $\frac{p-1}{2}\times8m$; $\frac{(p-1)^2}{4}\times16n$ $p\times8j(i^\dagger)$; $\frac{p(p-1)}{2}\times16n$ $p^2\times16n$

* origin 2
† origin 2 and $p=4n-1$
‡ origin 1 and $p=4n-1$