

Hexagonal

6. SCANNING TABLES

Laue class $C_{6h} - 6/m$ Laue class $C_{6h} - 6/m$ Geometric class $C_6 - 6$ No. 168 $P6$

$$\mathcal{G} = P6$$

 C_6^1

Orientation orbit (<i>hkil</i>)	Conventional basis of the scanning group			Scanning group	Linear orbit	Sectional layer group
	a'	b'	d	\mathcal{H}	sd	$\mathcal{L}(sd)$
(0001)	a	b	c	$P6$	sd	$p6$ L73

No. 169 $P6_1$

$$\mathcal{G} = P6_1$$

 C_6^2

Orientation orbit (<i>hkil</i>)	Conventional basis of the scanning group			Scanning group	Linear orbit	Sectional layer group
	a'	b'	d	\mathcal{H}	sd	$\mathcal{L}(sd)$
(0001)	a	b	c	$P6_1$	$[sd, (s + \frac{1}{6})d, (s + \frac{1}{3})d, (s + \frac{1}{2})d, (s + \frac{2}{3})d, (s + \frac{5}{6})d]$	$p1$ L01

No. 170 $P6_5$

$$\mathcal{G} = P6_5$$

 C_6^3

Orientation orbit (<i>hkil</i>)	Conventional basis of the scanning group			Scanning group	Linear orbit	Sectional layer group
	a'	b'	d	\mathcal{H}	sd	$\mathcal{L}(sd)$
(0001)	a	b	c	$P6_5$	$[sd, (s + \frac{1}{6})d, (s + \frac{1}{3})d, (s + \frac{1}{2})d, (s + \frac{2}{3})d, (s + \frac{5}{6})d]$	$p1$ L01

No. 171 $P6_2$

$$\mathcal{G} = P6_2$$

 C_6^4

Orientation orbit (<i>hkil</i>)	Conventional basis of the scanning group			Scanning group	Linear orbit	Sectional layer group
	a'	b'	d	\mathcal{H}	sd	$\mathcal{L}(sd)$
(0001)	a	b	c	$P6_2$	$[sd, (s + \frac{1}{3})d, (s + \frac{2}{3})d]$	$p112$ L03

No. 176 $P6_3/m$

$$\mathcal{G} = P6_3/m$$

 C_{6h}^2

Orientation orbit (<i>hkil</i>)	Conventional basis of the scanning group a' b' d			Scanning group \mathcal{H}	Linear orbit sd	Sectional layer group $\mathcal{L}(\mathbf{sd})$	
(0001)	a	b	c	$P6_3/m$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$ $[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$ $[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p\bar{3}$ $p\bar{6}$ $p3$	L66 L74 L65

Auxiliary tables for Laue class $C_{6h} - 6/m$ **Centring type P**

Orientation orbit (<i>hkil</i>)	Conventional basis of the scanning group a' b' d			Auxiliary basis of the scanning group $\hat{\mathbf{a}}$ $\hat{\mathbf{b}}$ $\hat{\mathbf{c}}$		
$(\overline{mnm} + \bar{n}0)$	c	$na - mb$	$pa + qb$	a	b	c
$(\overline{m} + nmn0)$	c	$ma + (m+n)\mathbf{b}$	$-qa + (p-q)\mathbf{b}$	b	$-(\mathbf{a} + \mathbf{b})$	c
$(\overline{nm} + \bar{nm}0)$	c	$-(m+n)\mathbf{a} - n\mathbf{b}$	$(q-p)\mathbf{a} - p\mathbf{b}$	$-(\mathbf{a} + \mathbf{b})$	a	c

Arithmetic classes $6P, \bar{6}P$ and $6/mP$

Serial No.	168	169	170	171	172	173	174	175	176
Group type	C_6^1	C_6^2	C_6^3	C_6^4	C_6^5	C_6^6	C_{3h}^1	C_{6h}^1	C_{6h}^2
Group	$P6$	$P6_1$	$P6_5$	$P6_2$	$P6_4$	$P6_3$	$\bar{P}6$	$P6/m$	$P6_3/m$
$(\overline{mnm} + \bar{n}0)$	$P112$	$P112_1$	$P112_1$	$P112$	$P112$	$P112_1$	$P11m$	$P112/m$	$P112_1/m$
$(\overline{m} + nmn0)$									
$(\overline{nm} + \bar{nm}0)$									

Laue class $D_{6h} - 6/mmm$ **Geometric class $D_6 - 622$** No. 177 $P622$

$$\mathcal{G} = P622$$

 D_6^1

Orientation orbit (<i>hkil</i>)	Conventional basis of the scanning group a' b' d			Scanning group \mathcal{H}	Linear orbit sd	Sectional layer group $\mathcal{L}(\mathbf{sd})$	
(0001)	a	b	c	$P622$	$0\mathbf{d}, \frac{1}{2}\mathbf{d}$ $[s\mathbf{d}, -s\mathbf{d}]$	$p622$ $p6$	L76 L73
$(01\bar{1}0)$	c	a	$\mathbf{a} + 2\mathbf{b}$	$A222$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p222$	L19
$(\bar{1}010)$	c	b	$-(2\mathbf{a} + \mathbf{b})$		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p22_12$	L20
$(1\bar{1}00)$	c	$-(\mathbf{a} + \mathbf{b})$	$(\mathbf{a} - \mathbf{b})$		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p112$	L03
$(\bar{1}2\bar{1}0)$	c	$2\mathbf{a} + \mathbf{b}$	b	$A222$	$[0\mathbf{d}, \frac{1}{2}\mathbf{d}]$	$p222$	L19
$(\bar{1}120)$	c	$(\mathbf{b} - \mathbf{a})$	$-(\mathbf{a} + \mathbf{b})$		$[\frac{1}{4}\mathbf{d}, \frac{3}{4}\mathbf{d}]$	$p22_12$	L20
$(2\bar{1}10)$	c	$-(\mathbf{a} + 2\mathbf{b})$	a		$[\pm s\mathbf{d}, (\pm s + \frac{1}{2})\mathbf{d}]$	$p112$	L03