D_{2h}^{27} $I2_1/b2_1/c2_1/a$ No. 73 *Ibca*

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 f 1	(1) x,y,z	(2) $\bar{x}+\frac{1}{2},\bar{y},z+\frac{1}{2}$	(3) $\bar{x},y+\frac{1}{2},\bar{z}+\frac{1}{2}$	(4) $x+\frac{1}{2},\bar{y}+\frac{1}{2},\bar{z}$
	(5) $\bar{x},\bar{y},\bar{z}$	(6) $x+\frac{1}{2},y,\bar{z}+\frac{1}{2}$	(7) $x,\bar{y}+\frac{1}{2},z+\frac{1}{2}$	(8) $\bar{x}+\frac{1}{2},y+\frac{1}{2},z$

I Maximal *translationengleiche* subgroups

[2] *Ibc*2 (45, *Iba*2)	(1; 2; 7; 8)+		0,1/4,0
[2] *Ib*2*a* (45, *Iba*2)	(1; 3; 6; 8)+	**c**,**a**,**b**	1/4,0,0
[2] *I*2*ca* (45, *Iba*2)	(1; 4; 6; 7)+	**b**,**c**,**a**	0,0,1/4
[2] $I2_12_12_1$ (24)	(1; 2; 3; 4)+		
[2] $I112/a$ (15, $A112/a$)	(1; 2; 5; 6)+	**b**, −**a** − **b**, **c**	
[2] $I12/c1$ (15, $C12/c1$)	(1; 3; 5; 7)+	−**a** − **c**, **b**, **a**	
[2] $I2/b11$ (15, $C12/c1$)	(1; 4; 5; 8)+	−**b** − **c**, **a**, **c**	

II Maximal *klassengleiche* subgroups

- **Loss of centring translations**

[2] *Pbca* (61)	1; 2; 3; 4; 5; 6; 7; 8		
[2] *Pcab* (61, *Pbca*)	1; 2; 3; 4; (5; 6; 7; 8) + $(\frac{1}{2},\frac{1}{2},\frac{1}{2})$	−**b**,**a**,**c**	1/4,1/4,1/4
[2] *Pcaa* (54, *Pcca*)	1; 2; 5; 6; (3; 4; 7; 8) + $(\frac{1}{2},\frac{1}{2},\frac{1}{2})$	**c**,**b**,−**a**	
[2] *Pccb* (54, *Pcca*)	1; 3; 5; 7; (2; 4; 6; 8) + $(\frac{1}{2},\frac{1}{2},\frac{1}{2})$	−**b**,**a**,**c**	
[2] *Pbab* (54, *Pcca*)	1; 4; 5; 8; (2; 3; 6; 7) + $(\frac{1}{2},\frac{1}{2},\frac{1}{2})$	**a**,−**c**,**b**	
[2] *Pbcb* (54, *Pcca*)	1; 2; 7; 8; (3; 4; 5; 6) + $(\frac{1}{2},\frac{1}{2},\frac{1}{2})$	**c**,**a**,**b**	1/4,1/4,1/4
[2] *Pbaa* (54, *Pcca*)	1; 3; 6; 8; (2; 4; 5; 7) + $(\frac{1}{2},\frac{1}{2},\frac{1}{2})$	**b**,**c**,**a**	1/4,1/4,1/4
[2] *Pcca* (54)	1; 4; 6; 7; (2; 3; 5; 8) + $(\frac{1}{2},\frac{1}{2},\frac{1}{2})$		1/4,1/4,1/4

- **Enlarged unit cell**

[3] $\mathbf{a}'=3\mathbf{a}$			
Ibca (73)	$\langle 3;\ 5;\ 2+(1,0,0)\rangle$	3**a**,**b**,**c**	
Ibca (73)	$\langle 2+(3,0,0);\ (3;\ 5)+(2,0,0)\rangle$	3**a**,**b**,**c**	1,0,0
Ibca (73)	$\langle 2+(5,0,0);\ (3;\ 5)+(4,0,0)\rangle$	3**a**,**b**,**c**	2,0,0
[3] $\mathbf{b}'=3\mathbf{b}$			
Ibca (73)	$\langle 2;\ 5;\ 3+(0,1,0)\rangle$	**a**,3**b**,**c**	
Ibca (73)	$\langle (2;\ 5)+(0,2,0);\ 3+(0,1,0)\rangle$	**a**,3**b**,**c**	0,1,0
Ibca (73)	$\langle (2;\ 5)+(0,4,0);\ 3+(0,1,0)\rangle$	**a**,3**b**,**c**	0,2,0
[3] $\mathbf{c}'=3\mathbf{c}$			
Ibca (73)	$\langle 5;\ (2;\ 3)+(0,0,1)\rangle$	**a**,**b**,3**c**	
Ibca (73)	$\langle 2+(0,0,1);\ 3+(0,0,3);\ 5+(0,0,2)\rangle$	**a**,**b**,3**c**	0,0,1
Ibca (73)	$\langle 2+(0,0,1);\ 3+(0,0,5);\ 5+(0,0,4)\rangle$	**a**,**b**,3**c**	0,0,2

- **Series of maximal isomorphic subgroups**

[p] $\mathbf{a}'=p\mathbf{a}$			
Ibca (73)	$\langle 2+(\frac{p}{2}-\frac{1}{2}+2u,0,0);\ (3;\ 5)+(2u,0,0)\rangle$ prime $p>2$; $0\le u<p$ p conjugate subgroups	p**a**,**b**,**c**	u,0,0
[p] $\mathbf{b}'=p\mathbf{b}$			
Ibca (73)	$\langle (2;\ 5)+(0,2u,0);\ 3+(0,\frac{p}{2}-\frac{1}{2},0)\rangle$ prime $p>2$; $0\le u<p$ p conjugate subgroups	**a**,p**b**,**c**	0,u,0
[p] $\mathbf{c}'=p\mathbf{c}$			
Ibca (73)	$\langle 2+(0,0,\frac{p}{2}-\frac{1}{2});\ 3+(0,0,\frac{p}{2}-\frac{1}{2}+2u);$ $5+(0,0,2u)\rangle$ prime $p>2$; $0\le u<p$ p conjugate subgroups	**a**,**b**,p**c**	0,0,u

I Minimal *translationengleiche* supergroups

[2] $I4_1/acd$ (142); [3] $Ia\bar{3}$ (206)

II Minimal non-isomorphic *klassengleiche* supergroups

- **Additional centring translations** none
- **Decreased unit cell**

[2] $\mathbf{a}' = \frac{1}{2}\mathbf{a}$ *Aemm* (67, *Cmme*); [2] $\mathbf{b}' = \frac{1}{2}\mathbf{b}$ *Bmem* (67, *Cmme*); [2] $\mathbf{c}' = \frac{1}{2}\mathbf{c}$ *Cmme* (67)

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(*Continued from the facing page*)

I Minimal *translationengleiche* supergroups

[2] $I4_1/amd$ (141)

II Minimal non-isomorphic *klassengleiche* supergroups

- **Additional centring translations** none
- **Decreased unit cell**

[2] $\mathbf{a}' = \frac{1}{2}\mathbf{a}$ *Ammm* (65, *Cmmm*); [2] $\mathbf{b}' = \frac{1}{2}\mathbf{b}$ *Bmmm* (65, *Cmmm*); [2] $\mathbf{c}' = \frac{1}{2}\mathbf{c}$ *Cmme* (67)