$p3$ No. 13 $p3$

Generators selected (1); $t(1,0)$; $t(0,1)$; (2)

General position

Multiplicity, Wyckoff letter, Site symmetry	Coordinates
3 d 1	(1) x,y (2) $\bar{y}, x-y$ (3) $\bar{x}+y, \bar{x}$

I Maximal *translationengleiche* subgroups

[3] $p1$ (1)   1

II Maximal *klassengleiche* subgroups

- **Enlarged unit cell**

[3] $\mathbf{a}' = 3\mathbf{a}$, $\mathbf{b}' = 3\mathbf{b}$

$h3$ (13, $p3$)	$\langle 2 \rangle$	$\mathbf{a}-\mathbf{b}, \mathbf{a}+2\mathbf{b}$	
$h3$ (13, $p3$)	$\langle 2+(1,0) \rangle$	$\mathbf{a}-\mathbf{b}, \mathbf{a}+2\mathbf{b}$	$2/3, 1/3$
$h3$ (13, $p3$)	$\langle 2+(1,1) \rangle$	$\mathbf{a}-\mathbf{b}, \mathbf{a}+2\mathbf{b}$	$1/3, 2/3$

[4] $\mathbf{a}' = 2\mathbf{a}$, $\mathbf{b}' = 2\mathbf{b}$

$p3$ (13)	$\langle 2 \rangle$	$2\mathbf{a}, 2\mathbf{b}$	
$p3$ (13)	$\langle 2+(1,-1) \rangle$	$2\mathbf{a}, 2\mathbf{b}$	$1,0$
$p3$ (13)	$\langle 2+(1,2) \rangle$	$2\mathbf{a}, 2\mathbf{b}$	$0,1$
$p3$ (13)	$\langle 2+(2,1) \rangle$	$2\mathbf{a}, 2\mathbf{b}$	$1,1$

- **Series of maximal isomorphic subgroups**

[p^2] $\mathbf{a}' = p\mathbf{a}$, $\mathbf{b}' = p\mathbf{b}$

$p3$ (13)	$\langle 2+(u+v, -u+2v) \rangle$	$p\mathbf{a}, p\mathbf{b}$	u,v
	$p > 1$; $0 \le u < p$; $0 \le v < p$		
	p^2 conjugate subgroups for prime $p \equiv 2 \pmod 3$		

[$p = q^2 + r^2 + qr$] $\mathbf{a}' = q\mathbf{a} - r\mathbf{b}$, $\mathbf{b}' = r\mathbf{a} + (q+r)\mathbf{b}$

$p3$ (13)	$\langle 2+(u,-u) \rangle$	$q\mathbf{a} - r\mathbf{b}, r\mathbf{a} + (q+r)\mathbf{b}$	$u,0$
	$p > 6$; $q > 0$; $r > 0$; $0 \le u < p$		
	p conjugate subgroups for each pair of q and r		

I Minimal *translationengleiche* supergroups

[2] $p3m1$ (14); [2] $p31m$ (15); [2] $p6$ (16)

II Minimal non-isomorphic *klassengleiche* supergroups   none