

1. INTRODUCTION TO SPACE-GROUP SYMMETRY

Table 1.6.4.16

Reflection conditions and possible space groups with Bravais lattice tI and Laue class $4/mmm$; hk are permutable; Patterson symmetry $I4/mmm$

Reflection conditions							Space group	No.	Space group	No.	Space group	No.
hkl	$hk0$	$0kl$	$h \pm hl$	$00l$	$h00$	$h \pm h0$						
$h+k+l$	$h+k$	$k+l$	l	l	h		I422	97	$I4mm$	107	$I\bar{4}m2$	119
							$I\bar{4}2m$	121	$I4/mmm$	139		
$h+k+l$	$h+k$	$k+l$	l	$l=4n$	h		I4₁22	98				
$h+k+l$	$h+k$	$k+l$	$2h+l=4n$	$l=4n$	h	h	$I4_1md$	109	$I\bar{4}2d$	122		
$h+k+l$	$h+k$	k, l	l	l	h		$I4cm$	108	$I\bar{4}c2$	120	$I4/mcm$	140
$h+k+l$	$h+k$	k, l	$2h+l=4n$	$l=4n$	h	h	$I4_1cd$	110				
$h+k+l$	h, k	$k+l$	$2h+l=4n$	$l=4n$	h	h	$I4_1/amd$	141				
$h+k+l$	h, k	k, l	$2h+l=4n$	$l=4n$	h	h	$I4_1/acd$	142				

Table 1.6.4.17

Reflection conditions and possible space groups with Bravais lattice hP and Laue class $\bar{3}$; hki are permutable; Patterson symmetry $P\bar{3}$

Reflection conditions			Space group	No.	Space group	No.
$hh\bar{2}hl$	$h\bar{h}0l$	$000l$				
			P3	143	$P\bar{3}$	147
		$l=3n$	P3₁	144	P3₂	145

Table 1.6.4.18

Reflection conditions and possible space groups with Bravais lattice hP and Laue classes $\bar{3}1m$ and $\bar{3}m1$; hki are permutable; Patterson symmetry $P\bar{3}1m$ and $P\bar{3}m1$

Reflection conditions			Class $\bar{3}1m$		Class $\bar{3}m1$	
$hh\bar{2}hl$	$h\bar{h}0l$	$000l$	Space group	No.	Space group	No.
			P312	149	P321	150
			$P31m$	157	$P3m1$	156
			$P\bar{3}1m$	162	$P\bar{3}m1$	164
		$l=3n$	P3₁12	151	P3₁21	152
			P3₂12	153	P3₂21	154
l		l	$P31c$	159		
			$P\bar{3}1c$	163		
	l	l			$P3c1$	158
					$P\bar{3}c1$	165

Table 1.6.4.19

Reflection conditions and possible space groups with Bravais lattice hP and Laue class $6/m$; hki are permutable; Patterson symmetry $P6/m$

Reflection conditions			Space group	No.	Space group	No.	Space group	No.
$hh\bar{2}hl$	$h\bar{h}0l$	$000l$						
			P6	168	$P\bar{6}$	174	$P6/m$	175
		l	P6₃	173	$P6_3/m$	176		
		$l=3n$	P6₂	171	P6₄	172		
		$l=6n$	P6₁	169	P6₅	170		