1. CRYSTAL GEOMETRY AND SYMMETRY

1.4.1.2. *Arithmetic crystal classes in one, two and higher dimensions*

In one dimension, there are two geometric crystal classes, 1 and *m*, and a single Bravais lattice, *p*. Two arithmetic crystal classes result, *p* and *mp*. In two dimensions, there are ten geometric crystal classes, and two Bravais lattices, *p* and *c*; 13 arithmetic crystal classes result. The two-dimensional geometric and arithmetic crystal classes are listed in Table 1.4.1.1.

The number of arithmetic crystal classes increases rapidly with increasing dimensionality; there are 710 (plus 70 enantiomorphs) in four dimensions (Brown, Bülow, Neubüser, Wondratschek & Zassenhaus, 1978), but those in dimensions higher than three are not needed in this volume.

Table 1.4.2.1. *The three-dimensional space groups, arranged by arithmetic crystal class; in a few geometric crystal classes this differs somewhat from the conventional numerical order; see International Tables Volume A, p. 728*

| Crystal system | Crystal class | | | Space group | |
| | Geometric | Arithmetic | | | |
		Number	Symbol	Number	Symbol
Triclinic	1	1	$1P$	1	$P1$
	$\bar{1}$	2	$\bar{1}P$	2	$P\bar{1}$
Monoclinic	2	3	$2P$	3	$P2$
				4	$P2_1$
		4	$2C$	5	$C2$
	m	5	mP	6	Pm
				7	Pc
		6	mC	8	Cm
				9	Cc
	$2/m$	7	$2/mP$	10	$P2/m$
				11	$P2_1/m$
				13	$P2/c$
				14	$P2_1/c$
		8	$2/mC$	12	$C2/m$
				15	$C2/c$
Orthorhombic	222	9	$222P$	16	$P222$
				17	$P222_1$
				18	$P2_12_12$
				19	$P2_12_12_1$
		10	$222C$	20	$C222_1$
				21	$C222$
		11	$222F$	22	$F222$
		12	$222I$	23	$I222$
				24	$I2_12_12_1$
	mm	13	$mm2P$	25	$Pmm2$
				26	$Pmc2_1$
				27	$Pcc2$
				28	$Pma2$
				29	$Pca2_1$
				30	$Pnc2$
				31	$Pmn2_1$
				32	$Pba2$
				33	$Pna2_1$
				34	$Pnn2$
		14	$mm2C$	35	$Cmm2$
				36	$Cmc2_1$
				37	$Ccc2$
		15	$2mmC$ ($Amm2$)	38	$C2mm$ ($Amm2$)
				39	$C2me$ ($Aem2$)
				40	$C2cm$ ($Ama2$)
				41	$C2ce$ ($Aea2$)
		16	$mm2F$	42	$Fmm2$
				43	$Fdd2$
		17	$mm2I$	44	$Imm2$
				45	$Iba2$
				46	$Ima2$

references