

### 3.60 Symmetry, Structure and Tensor Properties of Materials

#### DISTRIBUTION OF LATTICE TYPES AND POINT GROUPS AMONG THE CRYSTAL SYSTEMS

SYSTEM (6)	LATTICES (14)	POINT GROUPS (32)	LAUE GROUP (11)
TRICLINIC $a \neq b \neq c$ $\alpha \neq \beta \neq \gamma$	PRIMITIVE	1 $\bar{1}$	$\bar{1}$
MONOCLINIC $a \neq b \neq c$ $\alpha = \beta = \gamma = 90^\circ \neq \gamma$	PRIMITIVE SIDE-CENTERED $\equiv$ BODY CENT.	2 m $2/m$	$2/m$
ORTHORHOMBIC $a \neq b \neq c$ $\alpha = \beta = \gamma = 90^\circ$	PRIMITIVE SIDE-CENTERED BODY-CENTERED FACE-CENTERED	222 2mm $2/m 2/m 2/m$	$2/m 2/m 2/m$
TETRAGONAL $a_1 = a_2 \neq c$ $\alpha = \beta = \gamma = 90^\circ$	PRIMITIVE	4 $\bar{4}$ $4/m$	$4/m$
	BODY-CENTERED	422 4mm $\bar{4}2m$ $4/m 2/m 2/m$	$4/m 2/m 2/m$
HEXAGONAL $a_1 = a_2 \neq c$ $\alpha = \beta = 90^\circ \gamma = 120^\circ$	PRIMITIVE (only)	6 $3/m$ $6/m$	$6/m$
	---	622 6mm $\bar{6}2m$ $6/m 2/m 2/m$	$6/m 2/m 2/m$
	[Rhombohedral or TRIGONAL $a_1 = a_2 = a_3$ $\alpha_1 = \alpha_2 = \alpha_3$ ]	3 $\bar{3}$	$\bar{3}$
	" (or) Rhombohedral	32 3m $\bar{3} 2/m$	$\bar{3} 2/m$
ISOMETRIC OR CUBIC $a_1 = a_2 = a_3$ $\alpha = \beta = \gamma = 90^\circ$	PRIMITIVE	23 $2/m \bar{3}$	$2/m \bar{3}$
	BODY-CENTERED FACE-CENTERED	432 $\bar{4}3m$ $4/m \bar{3} 2/m$	$4/m \bar{3} 2/m$