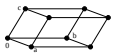
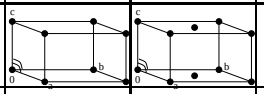
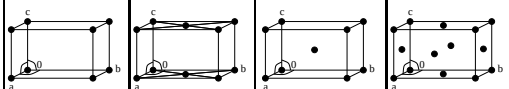
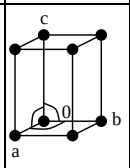
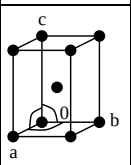
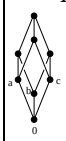
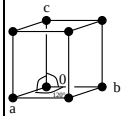
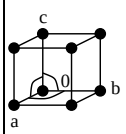
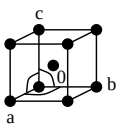
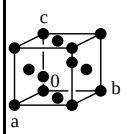
4.2. Raumgruppen

Die 230 Raumgruppen (mit Kristallsystemen, Punktgruppen, Bravaisgittertypen)

Kristall-system	Punkt-gruppe	Gitter-konstanten	Bravaisgittertypen P (x,y,z)	C (x,y,z; $x+\frac{1}{2},y+\frac{1}{2},z$)	I (x,y,z; $x+\frac{1}{2},y+\frac{1}{2},z+\frac{1}{2}$)	F (x,y,z; $x+\frac{1}{2},y+\frac{1}{2},z$; $x+\frac{1}{2},y,z+\frac{1}{2}$; $x,y+\frac{1}{2},z+\frac{1}{2}$)	Blickrichtung 1.	2.	3.	Raumgruppen
triklin	1	$a \neq b \neq c$					-	-	-	P1
	$\bar{1}$	$\alpha \neq \beta \neq \gamma \neq 90$								P$\bar{1}$
mono-klin	2	$a \neq b \neq c$					[010]	-	-	P2, P2_1, C2
	m	$\alpha = \gamma = 90^o$								Pm, Pc, Cm, Cc
	2/m	$\beta \neq 90^o$								P2/m, P2_1/m, C2/m, P2/c, P2_1/c, C2/c
ortho-rhom-bisch	222	$a \neq b \neq c$					[100]	[010]	[001]	P222, P222_1, P2_12_12, P$2_12_12_1$, C222_1, C222, F222, I222, I$2_12_12_1$, Pmm2, Pmc2_1, Pcc2, Pma2_1, Pca2_1, Pnc2_1, Pmn2_1, Pba2, Pna2_1, Pnn2, Cmm2, Cmc2_1, Ccc2, Amm2, Abma, Ama2, Aba2, Fmm2, Fdd2, Imm2, Iba2, Ima2
	mm2	$\alpha = \beta = \gamma = 90$								
	mmm									Pmmm, Pnnm, Pccm, Pban, Pmma, Pnna, Pmna, Pcca, Pbam, Pccn, Pbcm, Pnnm, Pmmn, Pbcn, Pbca, Pnma, Cmcm, Cmca, Cmmm, Cccm, Cmma, Ccca, Fmmm, Fddd, Immm, Ibam ,Ibca, Imma
tetra-gonal	4	$a = b \neq c$					[001]	[100]	[110]	P4, P4_1, P4_2, P4_3, I4, I4_1
	4	$\alpha = \beta = \gamma = 90$						[010]	[1$\bar{1}$0]	P4, I4
	4/m									P4/m, P4_2/m, P4/n, P4_2/n, I4/m, I4_1/a
	422									P422, P42_12, P4_122, P4_12_12, P4_222, P4_22_12, P4_322, P4_32_12, I422, I4_122
	4mm									P4mm, P4bm, P4_2cm, P4_2nm, P4cc, P4nc, P4_2mc, P4_2bc, I4mm, I4cm, I4_1md, I4_1cd
	4m									P$\bar{4}$2m, P$\bar{4}$2c, P$\bar{4}2_1$m, P$\bar{4}2_1$c, P$\bar{4}$m2, P$\bar{4}$c2, P$\bar{4}$b2, P$\bar{4}$n2, I$\bar{4}$m2, I$\bar{4}$c2, I$\bar{4}$2m, I$\bar{4}$2d
	4/mmm									P4/mmm, P4/mcc, P4/nbm, P4/nnc, P4/mbm, P4/mnc, P4/nmm, P4/ncc, P4_2/mmc, P4_2/mcm, P4_2/nbc, P4_2/nnm, P4_2/mbc, P4_2/mnm, P4_2/nmc, P4_2/ncm, I4/mmm, I4/mcm, I4_1/amd, I4_1/acd
tri-gonal	3	$a = b = c$	**R**				[111]	[1$\bar{1}$0]	-	P3, P3_1, P3_2, R3
	$\bar{3}$	$\alpha = \beta = \gamma \neq 90$						[01$\bar{1}$]		P$\bar{3}$, R$\bar{3}$
	32							[$\bar{1}$01]		P312, P321, P3_112, P3_121, P3_212, P3_221, R32
	3m									P3m1, P31m, P3c1, P31c, R3m, R3c
	$\bar{3}$m									P$\bar{3}$1m, P$\bar{3}$1c, P$\bar{3}$m1, P$\bar{3}$c1, R$\bar{3}$m, R$\bar{3}$c
hexa-gonal	6	$a = b \neq c$					[001]	[100]	[1$\bar{1}$0]	P6, P6_1, P6_5, P6_3, P6_2, P6_4
	$\bar{6}$	$\alpha = \beta = 90$						[010]	[120]	P$\bar{6}$
	6/m	$\gamma = 120$						[1$\bar{1}$0]	[$\bar{2}$10]	P6/m, P6_3/m
	622									P622, P6_122, P6_522, P6_222, P6_422, P6_322
	6mm									P6mm, P6cc, P6_3cm, P6_3mc
	6m									P$\bar{6}$m2, P$\bar{6}$c2, P$\bar{6}$2m, P$\bar{6}$2c
	6/mmm									P6/mmm, P6/mcc, P6_3/mcm, P6_3/mmc
kubisch	23	$a = b = c$					[100]	[111]	[110]	P23, F23, I23, P2_13, I2_13
	m3	$\alpha = \beta = \gamma = 90$					[010]	[1$\bar{1}$$\bar{1}$]	[01$\bar{1}$]	Pm$\bar{3}$, Pn$\bar{3}$, Fm$\bar{3}$, Fd$\bar{3}$, Im$\bar{3}$, Pa$\bar{3}$, Ia$\bar{3}$
	432						[001]	[$\bar{1}$1$\bar{1}$]	[$\bar{1}$01]	P432, P4_232, F432, F4_132, I432, P4_332, P4_132, I4_132
	$\bar{4}$3m							[$\bar{1}$$\bar{1}$1]	[1$\bar{1}$0]	P$\bar{4}$3m, F$\bar{4}$3m, I$\bar{4}$3m, P$\bar{4}$3n, F$\bar{4}$3c, I$\bar{4}$3d
	m3m								[011]	Pm$\bar{3}$m, Pn$\bar{3}$n, Pm$\bar{3}$n, Pn$\bar{3}$m,
									[101]	Fm$\bar{3}$m, Fm$\bar{3}$c, Fd$\bar{3}$m, Fd$\bar{3}$c, Im$\bar{3}$m, Ia$\bar{3}$d