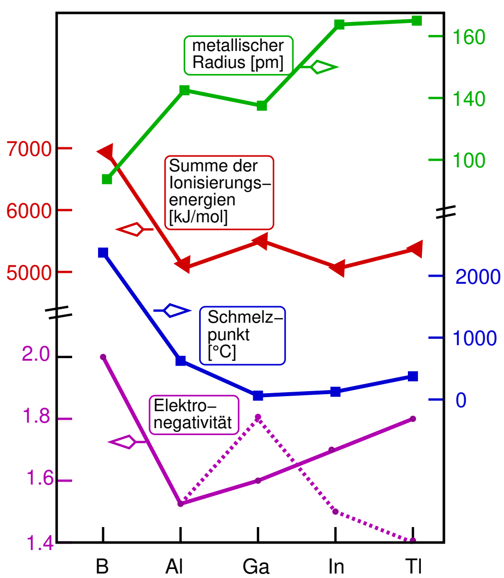
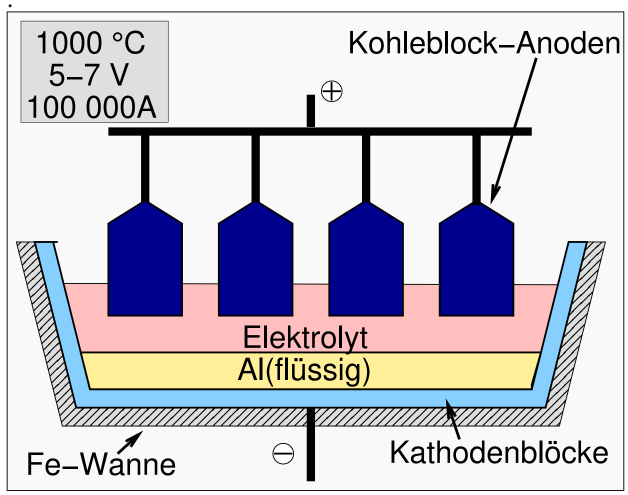
4. Triele (13. Gruppe; III. Hauptgruppe)

4.1. Übersicht

	Al	Ga	In	Tl
EN (Allred-Rochow)	1.47	1.82	1.49	1.44
E₀ [V]	-1.68	-0.53	-0.34	$-0.34^{+1}/+0.72^{+3}$
$\mathbf{r}_{M^{3+}}$ [pm] für CN 6	67.5	76	94	102.3
$\mathbf{r}_M$ [pm] für CN 12	143.2	141.1	166.3	171.6
Elemente	⟵ glänzende luftstabile Metalle ⟶			luftempfindlich
Schmelzpunkt [°C]	660	30	156	302
Struktur	f.c.c.	eigener T.	f.c.c./b.c.c.	h.c.p.
Darstellung	Schmelzelektrolyse	⟵ Elektrolyse der Salzlösungen ⟶		
Halogenide	MF_3: ReO_3-Str.; $AlCl_3$: Schichtstr.; Rest + in Lsg+Dampf: M_2X_6			
Oxide	α-(Korund) und γ-(Hydrargillit)M_2O_3		M_2O_3 und M_2O	
Hydroxide	α-(Bayerit) und γ-(Gibbsit)$M(OH)_3$			
Oxid-Hydroxide	α-$MO(OH)$ (Diaspor)			
MH₃ (Hydride)	polymerer FK	Dimere		
E(V)-Verb.	III/V-Halbleiter			
sonstige Verb.	$M^IM^{III}(SO_4)_2 \cdot 12H_2O$ (Alaune) $MgAl_2O_4$ (Spinell)			
Flammenfärbung	-	-	blau (indigo)	grün

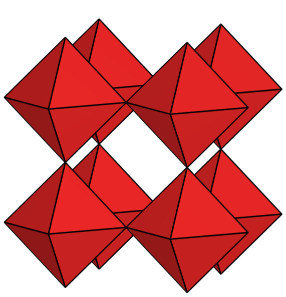


4.2. Elemente

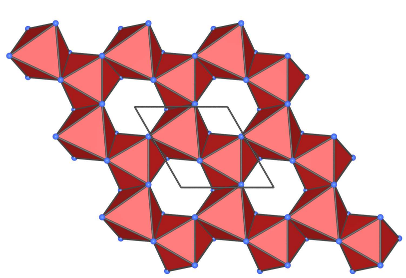


Elektrolytische Al-Herstellung

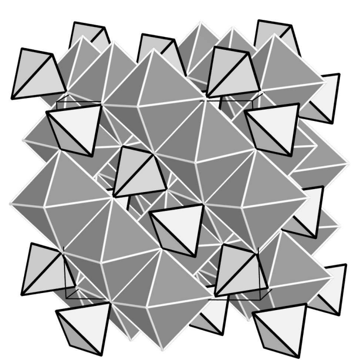
4.3. Halogenide und 4.4. Oxide



AlF_3 (ReO_3-Typ)



Oktaederschichten in $AlCl_3$ und in α-Al_2O_3



Struktur von Spinell ($MgAl_2O_4$): MgO_4-Tetraeder; AlO_6-Oktaeder