Other Data: ΔH_f° *ca.* –1682 kJ mol^{-1}; S° 50.9 JK^{-1} mol^{-1}; E_g >5 eV

>>**Derivative:** Mixed oxide with Cr_2O_3
Synonym(s): Ruby

CAS Registry Number: 12174-49-1
Source/Synthesis: Occurs naturally or may be synth. from NH_4 (Al,Cr) alums at 1450°
Use/Importance: Used in lasers and masers; gem
Physical Description: Brilliant red cryst.
Other Data: Red colour imparted by 1-4% Cr_2O_3

>>**Derivative:** Mixed oxide with Fe, Ti
Synonym(s): Sapphire. Blue sapphire

CAS Registry Number: 1317-82-4
Extra CAS Registry Numbers(s): 12678-40-9
Use/Importance: Gem
Physical Description: Transparent blue cryst.

>>**Variant:** β-form

Molecular Formula: Al_2O_3
Molecular Weight: 101.961
Accurate Mass: 101.947823
Percentage Composition: Al 52.93%; O 47.07%

($Al_{11}NaO_{17}$) JZD10-D and β" alumina Al_5NaO_8

>>**Variant:** γ-form

Molecular Formula: Al_2O_3
Molecular Weight: 101.961
Accurate Mass: 101.947823
Percentage Composition: Al 52.93%; O 47.07%

Physical Description: White solid; readily takes up H_2O and dissolves in acids
Other Data: Forms on oxidised Al surfaces