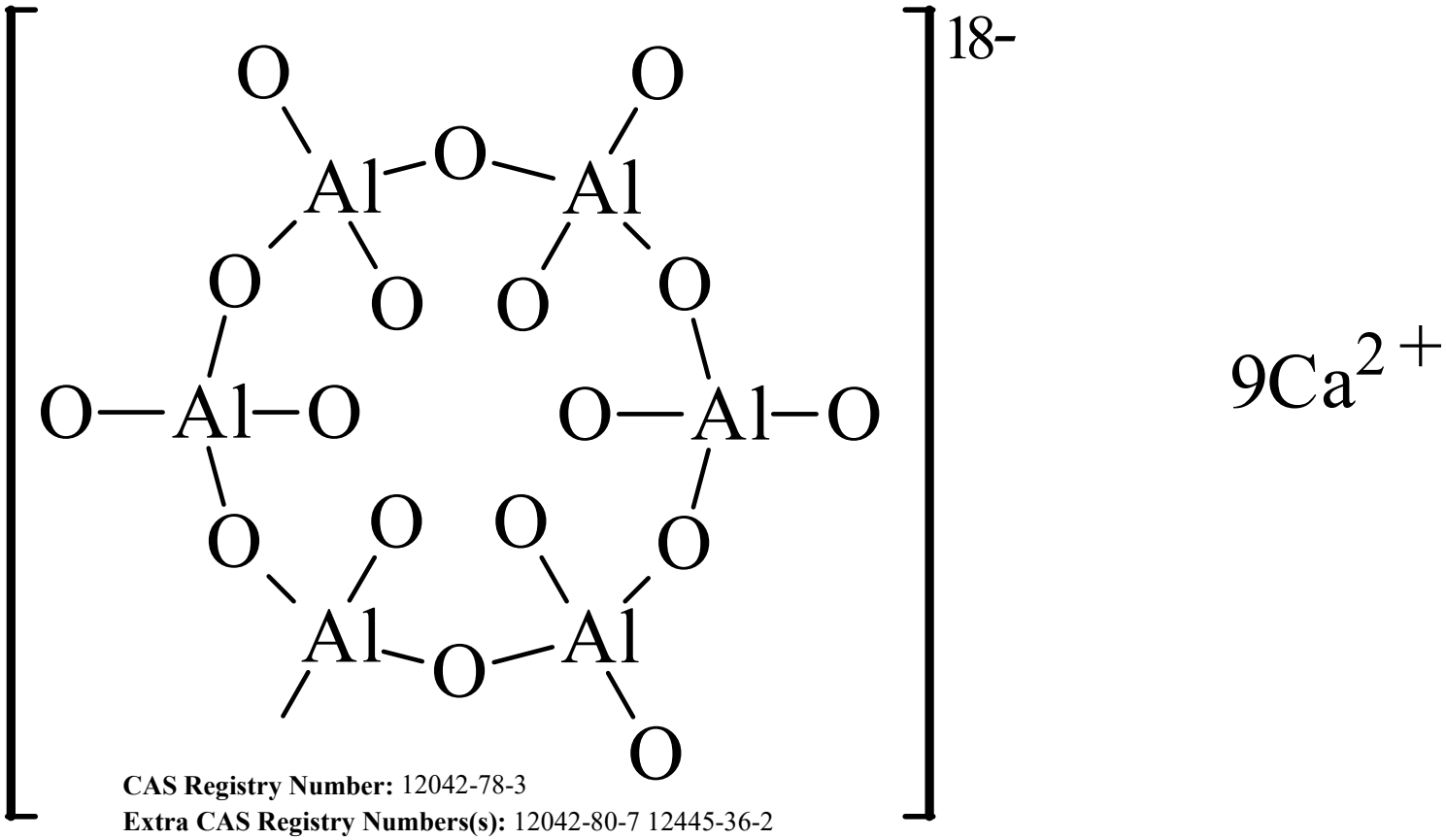
>>**Entry Name: Aluminium calcium oxide ($Al_2Ca_3O_6$)**
**Synonym(s):** $C_3A$. Calcium aluminate



**CAS Registry Number:** 12042-78-3
**Extra CAS Registry Numbers(s):** 12042-80-7 12445-36-2

**Molecular Formula:** $Al_2Ca_3O_6$
**Molecular Weight:** 270.193
**Accurate Mass:** 269.820341
**Percentage Composition:** Al 19.97%; Ca 44.50%; O 35.53%
**Source/Synthesis:** Synth. by sudden chilling of $CaO\text{-}Al_2O_3$ melt from 1539°
**Use/Importance:** Component of Portland cement
**Physical Description:** White cryst. (melt)
**Melting Point:** Mp 1539°
**Other Data:** Several similar compds. including hydrates descr. Reacts with water to give $2CaO.Al_2O_3.8H_2O$ <20° and $3CaO.Al_2O_3.6H_2O$ >20°. Dec. to CaO + liq. at 1535°. $\Delta H^{\circ}_{f\,298}$ –3587.8 kJ $mol^{-1}$, $S^{\circ}_{298}$ 204.0 J $K^{-1}$ $mol^{-1}$

**References:**