Complication with Combustion of Magnesium

Magnesium when burned in area can have a side reaction with nitrogen gas.

$$Mg + N_2 \rightarrow Mg_3N_2$$

The magnesium nitride side product can be converted to magnesium oxide in two steps

$$Mg_3N_2 + H_2O \rightarrow Mg(OH)_2 + NH_3$$

 $Mg(OH)_2 + heat \rightarrow MgO + H_2O$

When heated all $\mathrm{NH_3}$ and $\mathrm{H_2O}$ is driven off, hence only pure MgO should remain.