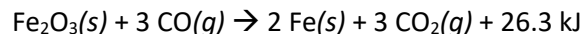
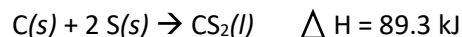


14. The production of iron and carbon dioxide from iron (III) oxide and carbon monoxide is an exothermic reaction. How many kilojoules of heat are produced when 3.40 mol Fe_2O_3 reacts with an excess of CO?

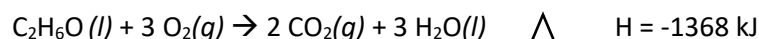


15. When carbon disulfide is formed from its elements, heat is absorbed. Calculate the amount of heat (in kJ) absorbed when 5.66 g of carbon disulfide is formed.

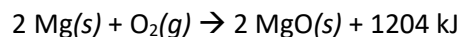


20. When 2 mol of solid magnesium (Mg) combines with 1 mol of oxygen gas (O_2), 2 mol of solid magnesium oxide (MgO) is formed and 1204 kJ of heat is released. Write the thermochemical equation for this combustion reaction.

21. Gasohol contains ethanol, $\text{C}_2\text{H}_6\text{O}(l)$. When ethanol burns, it reacts with $\text{O}_2(g)$ to produce $\text{CO}_2(g)$ and $\text{H}_2\text{O}(l)$. How much heat is released when 12.5 g of ethanol burns?

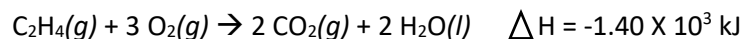


59. The burning of magnesium is a highly exothermic reaction.



How many kilojoules of heat are released when 0.75 mol of Mg burn in an excess of O_2 ?

82. The combustion of ethene (C_2H_4) is an exothermic reaction.



Calculate the amount of heat liberated with 4.79 g of C_2H_4 reacts with excess oxygen.