

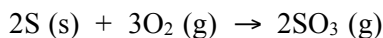
AP Chem Ch. 5 Study Sheet 2

Multiple Choice

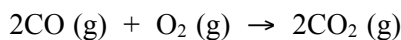
Identify the choice that best completes the statement or answers the question.

- The value of ΔE for a system that performs 213 kJ of work on its surroundings and loses 79 kJ of heat is _____ kJ.
 - +292
 - 292
 - +134
 - 134
 - 213
- Calculate the value of ΔE in joules for a system that loses 50 J of heat and has 150 J of work performed on it by the surroundings.
 - 50
 - 100
 - 100
 - 200
 - +200
- The change in the internal energy of a system that absorbs 2,500 J of heat and that does 7,655 J of work on the surroundings is _____ J.
 - 10,155
 - 5,155
 - 5,155
 - 10,155
 - 1.91×10^7
- The change in the internal energy of a system that releases 2,500 J of heat and that does 7,655 J of work on the surroundings is _____ J.
 - 10,155
 - 5,155
 - -1.91×10^7
 - 10,155
 - 5,155
- The value of ΔH° for the reaction below is -72 kJ. _____ kJ of heat are released when 1.0 mol of HBr is formed in this reaction.
$$\text{H}_2(\text{g}) + \text{Br}_2(\text{g}) \rightarrow 2\text{HBr}(\text{g})$$
 - 144
 - 72
 - 0.44
 - 36
 - 72
- The value of ΔH° for the reaction below is -126 kJ. _____ kJ are released when 2.00 mol of NaOH is formed in the reaction?
$$2\text{Na}_2\text{O}_2(\text{s}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 4\text{NaOH}(\text{s}) + \text{O}_2(\text{g})$$
 - 252
 - 63
 - 3.9
 - 7.8
 - 126
- The value of ΔH° for the reaction below is -126 kJ. The amount of heat that is released by the reaction of 25.0 g of Na_2O_2 with water is _____ kJ.
$$2\text{Na}_2\text{O}_2(\text{s}) + 2\text{H}_2\text{O}(\text{l}) \rightarrow 4\text{NaOH}(\text{s}) + \text{O}_2(\text{g})$$
 - 20.2
 - 40.4
 - 67.5
 - 80.8
 - 126

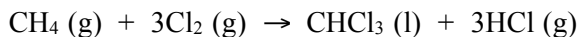
8. The value of ΔH° for the reaction below is -790 kJ. The enthalpy change accompanying the reaction of 0.95 g of S is _____ kJ.



- a. 23
b. -23
c. -12
d. 12
e. -790
9. The value of ΔH° for the reaction below is -6535 kJ. _____ kJ of heat are released in the combustion of 16.0 g of C_6H_6 (l)?
- $$2\text{C}_6\text{H}_6\text{ (l)} + 15\text{O}_2\text{ (g)} \rightarrow 12\text{CO}_2\text{ (g)} + 6\text{H}_2\text{O (l)}$$
- a. 1.34×10^3
b. 5.23×10^4
c. 669
d. 2.68×10^3
e. -6535
10. The value of ΔH° for the reaction below is -482 kJ. Calculate the heat (kJ) released to the surroundings when 12.0 g of CO (g) reacts completely.

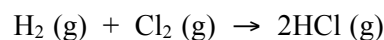


- a. 2.89×10^3
b. 207
c. 103
d. 65.7
e. -482
11. The value of ΔH° for the reaction below is -336 kJ. Calculate the heat (kJ) released to the surroundings when 23.0 g of HCl is formed.

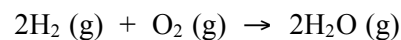


- a. 177
b. 2.57×10^3
c. 70.7
d. 211
e. -336

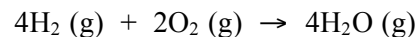
12. The value of ΔH° for the reaction below is -186 kJ. Calculate the heat (kJ) released from the reaction of 25 g of Cl_2 .



- a. 66
b. 5.3×10^2
c. 33
d. 47
e. -186
13. The enthalpy change for the following reaction is -483.6 kJ:



Therefore, the enthalpy change for the following reaction is _____ kJ:



- a. -483.6
b. -967.2
c. 2.34×10^5
d. 483.6
e. 967.2
14. The value of ΔH° for the reaction below is +128.1 kJ:



How many kJ of heat are consumed when 15.5 g of CH_3OH (l) decomposes as shown in the equation?

- a. 0.48
b. 62.0
c. 1.3×10^2
d. 32
e. 8.3