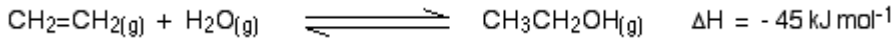
Chemguide – questions

K_C

1. The reaction between ethene and steam to produce ethanol is an example of a homogeneous equilibrium:

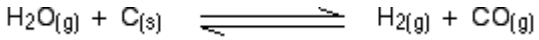


a) What do you understand by the term *homogeneous* when it refers to an equilibrium reaction?

b) Write the expression for the equilibrium constant K_C for the reaction above.

c) Your expression should have included the use of square brackets. What meaning do these square brackets have?

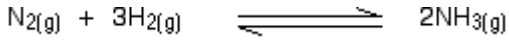
2. The reaction between heated carbon and steam involves the heterogeneous equilibrium:

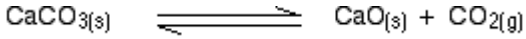


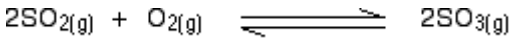
a) What do you understand by the term *heterogeneous* when it refers to an equilibrium reaction?

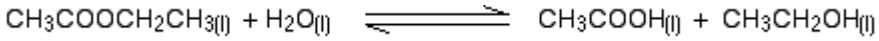
b) Write the expression for the equilibrium constant K_C for this reaction.

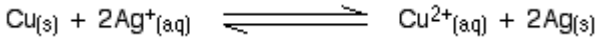
3. Write expressions for the equilibrium constants for the following reactions.

a) 

b) 

c) 

d) 

e) 

4. The equilibrium constant for a reaction involving only A, B, C and D is given by:

$$K_C = \frac{[C]\,[D]}{[A]\,[B]^2}$$

Write the equation for the reaction.