CHEM1405 (Vet. Science) - 2002

2002-J-2

- \( \text{Bi}_2(\text{SO}_4)_3(s) \rightarrow 2\text{Bi}^{3+}(aq) + 3\text{SO}_4^{2-}(aq) \)

- copper(II) chloride-6-water
  
  \( \text{NH}_4\text{Br} \)
  
  potassium permanganate
  
  \( \text{TiO}_2 \)

- \(-23.5 \text{ kJ mol}^{-1}\)

- Long chain fatty acids consist of a polar head and a non-polar tail. When dispersed in water they arrange themselves spherically so that the polar (hydrophilic) heads are interacting with the polar water molecules and the non-polar (hydrophobic) tails are interacting with each other. This arrangement is called a micelle.

- \( \text{SbCl}_5 \)

2002-J-3

- \( k = 0.210 \text{ hour}^{-1} \quad t_{1/2} = 3.30 \text{ hour} \)
  
  6.60 hour

  The appropriate second order rate law is \( \text{Rate} = k[\text{sucrose}][\text{water}] \).

  The concentration of water (present in vast excess as the solvent) does not change over time, thus giving a pseudo first order rate law: \( \text{Rate} = k_1[\text{sucrose}] \) where \( k_1 = k[\text{water}] \).

2002-J-4

- \( 2.00 \times 10^{-9} \text{ M}^2 \)

- \( 5.4 \times 10^{-5} \text{ M} \)

- \( \text{C}_6\text{H}_5\text{CH}_2\text{CO}_2^-(aq) + \text{H}_3\text{O}^+(aq) \rightarrow \text{C}_6\text{H}_5\text{CH}_2\text{COOH}(aq) + \text{H}_2\text{O} \)

- \( \text{C}_6\text{H}_5\text{CH}_2\text{COOH}(aq) + \text{OH}^-(aq) \rightarrow \text{C}_6\text{H}_5\text{CH}_2\text{CO}_2^- (aq) + \text{H}_2\text{O} \)
2002-J-5

<table>
<thead>
<tr>
<th>dilute HCl</th>
<th>( \text{SH} + \text{HS} )</th>
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<tbody>
<tr>
<td></td>
<td>( \text{Br} \text{Br} \text{Br} \text{Br} )</td>
</tr>
<tr>
<td>CH(_3)OH</td>
<td>( \text{O}^\ominus \text{Na}^\ominus )</td>
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<tr>
<td></td>
<td>Cr(_2)O(_7)(^\ominus)/H(^\ominus)</td>
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<td>excess CH(_3)OH</td>
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2002-J-6

<table>
<thead>
<tr>
<th>CH(_2)Br</th>
<th>CH(_2)NHCH(_3)</th>
<th>CH(_2)</th>
<th>H</th>
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- 1,4-dibromo-2,3-dimethylheptane