

Answers to Chapter 7

7.6	Breaking Molecules Apart		
1.	<p>Hazards of storage – store in plastic bottle since hydrogen peroxide breaking down releases oxygen gas and the bottle might need to expand a little. Plastic expands a little.</p> <ul style="list-style-type: none"> - should store in dark bottle because sunlight speeds up the decomposition (breaking down). Dark bottle keeps reaction occurring slowly. - large bottles of hydrogen peroxide have venting caps to release the oxygen gas building up. <p>Disposal - need to be careful when you get rid of it because hydrogen peroxide reacts with so many things!</p> <p>Use – used to clean contact lens – careful – don't use ordinary hydrogen peroxide – that could 'burn' your eyes. A special form of hydrogen peroxide used for contacts.</p>		
2.	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>Water</p> <p>Formula: H₂O</p> <p>Stability: very stable</p> <p>Shelf life: last forever</p> <p>Safety: water is safe</p> <p>Uses: drinking, washing, etc.</p> <p>Disposal: safe to pour down drain</p> </td> <td style="width: 50%; vertical-align: top;"> <p>hydrogen peroxide</p> <p>H₂O₂</p> <p>Not stable...breaks down</p> <p>Breaks down slowly (more quickly in sunlight)</p> <p>Irritates eyes, bleaches hair, very reactive with other substances.</p> <p>Cleans contact lens, bleaches hair & teeth & clothes</p> <p>Need to be careful how dispose of. Should NOT go down drain.</p> </td> </tr> </table>	<p>Water</p> <p>Formula: H₂O</p> <p>Stability: very stable</p> <p>Shelf life: last forever</p> <p>Safety: water is safe</p> <p>Uses: drinking, washing, etc.</p> <p>Disposal: safe to pour down drain</p>	<p>hydrogen peroxide</p> <p>H₂O₂</p> <p>Not stable...breaks down</p> <p>Breaks down slowly (more quickly in sunlight)</p> <p>Irritates eyes, bleaches hair, very reactive with other substances.</p> <p>Cleans contact lens, bleaches hair & teeth & clothes</p> <p>Need to be careful how dispose of. Should NOT go down drain.</p>
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3.	<p>Hydrogen peroxide is great for hair dye because as it breaks down, the oxygen released reacts with hair pigments (colour) and bleaches them. Hydrogen peroxide gives you blonde or 'white' hair. Now you can add any colour!</p>		
4.	<p>The oxygen released as hydrogen peroxide breaks down reacts with bacteria in a cut and kill it. So hydrogen peroxide disinfects!</p>		
5.	<p>Hydrogen peroxide is sold in dark bottles to protect it from sunlight. Sunlight would speed up the break down (decomposition) of hydrogen peroxide.</p>		
6.	<p>The contact lens case has the catalyst platinum because you want the hydrogen peroxide to break down and release oxygen when the contacts are in the cleaning solution. The oxygen cleans the lens. You DON'T want the catalyst platinum added to hydrogen peroxide because then the hydrogen peroxide would break down all on its own (and not help clean the contact lens).</p>		