

## Shedding Light on Acids and Bases Episode 1: Acids in Industry Name: \_\_\_\_\_

Part A

1. List three common acids: \_\_\_\_\_  
\_\_\_\_\_
2. List two common bases: \_\_\_\_\_

Part B

3. What are 4 uses of sulfuric acid in industry? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Describe the chemical reaction between concentrated sulfuric acid and sugar. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5. Write down the chemical formulas of the following acids:

Acid	Chemical Formula
sulfuric acid	
hydrochloric acid	
nitric acid	
carbonic acid	

6. What makes an acid an acid? \_\_\_\_\_  
\_\_\_\_\_
7. Why aren't ethanol ( $\text{CH}_3\text{CH}_2\text{OH}$ ) and methane ( $\text{CH}_4$ ) acids? \_\_\_\_\_  
\_\_\_\_\_

8. Describe the chemical reaction between hydrochloric acid and magnesium metal.

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\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



9. Write down the chemical equation for the reaction between hydrochloric acid and magnesium.  
in words: \_\_\_\_\_  
in symbols: \_\_\_\_\_
10. Zinc also reacts with hydrochloric acid (in a similar way to magnesium). Write down the chemical equation. (The chemical formula of zinc chloride is  $\text{ZnCl}_2$ .)  
in words: \_\_\_\_\_  
in symbols: \_\_\_\_\_
11. Write down (in words) the general chemical equation for a reaction between a metal and an acid.  
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12. Briefly describe the difference between the chemical reactions between hydrochloric acid and magnesium and acetic acid and magnesium. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

13. Steel undergoes the process of pickling before it is used to manufacture steel products? What is pickling? \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
14. Write down the chemical equation for the reaction between iron(III) oxide and hydrochloric acid.  
 in words: \_\_\_\_\_  
 in symbols: \_\_\_\_\_
15. How does vinegar or lemon juice clean the rust off a barbeque plate? \_\_\_\_\_  
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 \_\_\_\_\_
16. Certain foods like onions, cucumbers, and cabbage can be pickled. What does this mean?  
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17. Why do foods spoil (or rot or “go off”) and how does refrigeration prevent spoilage?  
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18. Scurvy results from a lack of Vitamin C. What are some of the symptoms of scurvy? \_\_\_\_\_  
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19. Why did Captain James Cook take sauerkraut on his voyages in the 1770s but not other vegetables? Why didn't the sauerkraut spoil?  
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20. Why do farmers use fertilizers? \_\_\_\_\_  
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21. Write down the chemical equation for the production of ammonium sulfate from ammonia and sulfuric acid.  
 in words: \_\_\_\_\_  
 in symbols: \_\_\_\_\_
22. Briefly describe how sulfuric acid is made. \_\_\_\_\_  
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