

7.2 ZINC

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Occurrence

1. Write down the molecular formula of calamine. 1
2. Name two ores of zinc with their formulae. 2

Extraction of Zinc from Zinc Blende

3. Give the reactions for the extraction of metallic zinc from zinc blende. 2

Properties

1. **Action of air:**
4. The metal 'M' with electronic configuration $[\text{Ar}] 3d^{10}4s^2$ belongs to group IIB in the periodic table, and it's commonly called 'Jasta'.
 - a. Identify the metal 'M' and write its main ore. 1
 - b. Why is metal 'M' not considered a transition element? 1
 - c. Draw the vertical retort. Write its reduction reaction. 2
 - d. What happens when metal 'M' is exposed to air for a long time? 1
5. Zinc is considered a non-typical element, and it belongs to the elements of group IIB.
 - i) Why are the elements of group IIB called volatile metals?
 - ii) Name the process of concentration of zinc blende during the extraction of zinc.
 - iii) What is meant by spelter zinc?
 - iv) How is granulated zinc prepared? (5 x 1)

4. **Action of acid:**

2. **Action with alkali:**

3. **Displacement reaction**

Uses of Zinc

6. What is the action of heat on zinc? 1
7. Give a balanced chemical equation for the following: Zinc is exposed to moist air. 1
8. Why does zinc become dull in the presence of moist air? 1
9. Write the molecular formula of Philosopher's wool. 1
10. Write a balanced chemical equation for: Zinc is dissolved in hot and conc. NaOH. 2
11. Why does zinc displace copper from the copper sulphate solution? 1

White vitriol

Preparation

12. How would you obtain white vitriol from zinc? 1
13. How will you obtain crystals of white vitriol? 2

Properties

Action of heat:

14. What happens when white vitriol is strongly heated? 1

Action with alkali:

15. What action takes place when aq. NaOH is added to the zinc sulphate solution drop by drop till excess? 2

4. Formation of double salts:

5. Action with potassium ferrocyanide:

6. Action with barium sulphide:

16. What happens when white vitriol is treated with BaS solution? 1

17. How is lithopone prepared? Write its one important application. 2

Uses of white vitriol

18. Write an important use of white vitriol. 1

19. Write short notes on the chemistry of white vitriol. 5

20. Write the preparation, properties, and uses of white vitriol. 5

21. An important compound of the non-typical transition metal zinc is used as an eye lotion and is also called white vitriol.

i) Write down a method for the preparation of white vitriol.

ii) What happens when white vitriol is heated to 800 °C?

iii) Define double salt, giving an example of it.

iv) How is Lithopone obtained from White vitriol?

v) Why is zinc considered not a typical transition metal?

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