

Science | Worksheet | Grade IX
Is Matter around us pure?

- Write your observation when the following processes take place:
 - An aqueous solution of sugar is heated till it gets dried up.
 - A saturated solution of KCL at 60°C is allowed to cool at room temperature.
 - A mixture of iron filings and sulphur powder is heated strongly.
 - A beam of light is passed through colloidal solution.
 - Dilute HCl is added to mixture of iron filings and sulphur powder.
- What is chromatography? How will you separate the components of black ink using chromatography? Write any two applications of chromatography.
- (a) You are given a mixture of sand, water and mustard oil. How will you separate the components of this mixture? Explain it with the help of different separation methods involved in it.
(b) Give flow diagram showing the process of obtaining gases from air.
- A. Which of the following are chemical changes and physical change?
 - Decaying of wood
 - Sawing of wood
 - Burning of wood
 - Hammering of a nail into a piece of woodB. We know that Tincture of iodine has antiseptic properties. This solution is made by dissolving
 - iodine in alcohol
 - iodine in vaseline
 - iodine in H_2O
 - iodine in KI
- To make a saturated solution 36 g of sodium chloride is dissolved in 100 g of water at 293 K. find its concentration at this temperature.
- Give two examples from daily life where Tyndall effect is observed.
- Identify homogeneous and heterogeneous mixtures among the following:
Air, salt solution, kerosene in water, muddy water, soil, soda water
- Three students A, B and C prepared mixtures using chalk powder, common salt and milk respectively in water. Whose mixture:

- a. Would not leave residue on filter paper after filtration?
- b. Would show Tyndall effect?
- c. Would give transparent/clear solution?
- d. Would settle down at the bottom when left undisturbed?
- e. Could be filtered by filter paper?

9. Based on the following characteristics distinguish in tabular form the behavior of true solution, suspension and colloidal solution:

- (i) Appearance (ii) Visibility (iii) Filterability (iv) Tyndall effect (v) stability
(vi) Particle size

OR

List any three properties on the basis of which a colloidal solution can be recognized.

10. How will you separate a mixture of red and blue inks? Name the technique used. Draw a labeled diagram and explain it.

11. Explain the term fractional distillation. Draw a labeled diagram for carrying out the process of fractional distillation.

12. Show diagrammatically how water is purified in the water works system and list the processes involved.

13.(i) What is meant by crystallization? How is impure copper sulphate purified by the process?

(ii) Differentiate between simple distillation and fractional distillation.

14. Identify the physical and chemical changes from the following:

- a. Heating the mixture of iron and sulphur
- b. Ripening of fruits
- c. Dissolution of salt in water
- d. Making egg omelets

15. (a) Compare metals and non - metals based on their physical properties. (any four points)

(b) What are metalloids? Give two examples.

(c) Identify metals from the following: Boron, sodium, mercury, carbon.

16. What is the principle of separating funnel technique? How it is useful in extraction of iron from its ore?

17. List three differences between a physical change and a chemical change.

18. Differentiate between, an element and a compound (any two points) with one example each.

19. (i) Name the compound formed on heating a mixture of iron filings and sulphur.

(ii) If dilute HCl is added to above compound then name the gas evolved and write down its two properties.