

CLASS :8

Subject: CHEMISTRY

Date:16/06/2020

Topic:ELEMENTS,COMPOUNDS AND MIXTURES

Time Limit:60 MINUTES

Worksheet No. :10

GOOD DAY,CHILDREN hope you are staying safe during the course of unlock 1....coming to studies in the last work sheet we have discussed about the symbols today we are going to learn about the compounds...mixtures...types of mixtures...valency....examples of mixtures.....

COMPOUNDS

When atoms of two or more different elements combine chemically in a fixed proportion, they form compounds.

For e.g.

Water is composed of hydrogen and oxygen but the properties of water are different from both this elements.

VALENCY

The combining capacity of an element is called valency.

The atoms that donate electrons are said to have **ELECTROPOSITIVE VALENCY**.

The atoms that accept electrons are said to have **ELECTRONEGATIVE VALENCY**.

VALENCY CHART OF DIFFERENT ELEMENTS:

Monovalent electropositive		Divalent electropositive		Trivalent electropositive	
1. Ammonium	NH ₄ ⁺	1. Argentica [Silver(II)]	Ag ²⁺	1. Aluminium	Al ³⁺
2. Aurous [Gold (I)]	Au ⁺	2. Barium	Ba ²⁺	2. Arsenic	As ³⁺
3. Argentous [Silver (I)]	Ag ⁺	3. Calcium	Ca ²⁺	3. Auric [Gold (III)]	Au ³⁺
4. Cuprous [Copper (I)]	Cu ⁺	4. Cupric [Copper(II)]	Cu ²⁺	4. Bismuth	Bi ³⁺
5. Hydrogen	H ⁺	5. Ferrous [Iron (II)]	Fe ²⁺	5. Chromium	Cr ³⁺
6. Lithium	Li ⁺	6. Magnesium	Mg ²⁺	6. Ferric [Iron (III)]	Fe ³⁺
7. Sodium	Na ⁺	7. Manganese	Mn ²⁺		
8. Potassium	K ⁺	8. Mercuric [Mercury (II)]	Hg ²⁺	Tetravalent electropositive	
9. Mercurous [Mercury (I)]	Hg ⁺	9. Nickel	Ni ²⁺	1. Plumbic [Lead (IV)]	Pb ⁴⁺
		10. Plumbous [Lead (II)]	Pb ²⁺	2. Platinic [Platinum (IV)]	Pt ⁴⁺
		11. Platinous [Platinum (II)]	Pt ²⁺	3. Stannic [Tin (IV)]	Sn ⁴⁺
		12. Stannous [Tin (II)]	Sn ²⁺		
		13. Zinc	Zn ²⁺		

Table 4.4 : List of some common electrovalent negative ions (acid radicals)

Monovalent electronegative		Divalent electronegative		Trivalent electronegative	
1. Acetate	CH ₃ COO ⁻	1. Carbonate	CO ₃ ²⁻	1. Arsenate	AsO ₄ ³⁻
2. Bicarbonate or Hydrogen carbonate	HCO ₃ ⁻	2. Dichromate	Cr ₂ O ₇ ²⁻	2. Nitride	N ³⁻
3. Bisulphide or Hydrogen sulphide	HS ⁻	3. Oxide	O ²⁻	3. Aluminate	AlO ₃ ³⁻
4. Bisulphate or Hydrogen sulphate	HSO ₄ ⁻	4. Peroxide	O ₂ ²⁻	4. Arsenite	AsO ₃ ³⁻
5. Bisulphite or Hydrogen sulphite	HSO ₃ ⁻	5. Sulphate	SO ₄ ²⁻	5. Phosphide	P ³⁻
6. Bromide	Br ⁻	6. Sulphite	SO ₃ ²⁻	6. Phosphite	PO ₃ ³⁻
7. Chloride	Cl ⁻	7. Sulphide	S ²⁻	7. Phosphate	PO ₄ ³⁻
8. Permanganate	MnO ₄ ⁻	8. Silicate	SiO ₃ ²⁻	8. Borate	BO ₃ ³⁻
9. Fluoride	F ⁻	9. Thiosulphate	S ₂ O ₃ ²⁻		
10. Hydride	H ⁻	10. Zincate	ZnO ₂ ²⁻	Tetravalent electronegative	
11. Hydroxide	OH ⁻	11. Plumbate	PbO ₂ ²⁻	1. Carbide	C ⁴⁻
12. Iodide	I ⁻	12. Stannate	SnO ₃ ²⁻	2. Ferrocyanide	Fe(CN) ₆ ⁴⁻
13. Cyanide	CN ⁻	13. Manganate	MnO ₄ ²⁻		
14. Nitrate	NO ₃ ⁻	14. Chromate	CrO ₄ ²⁻		
15. Nitrite	NO ₂ ⁻	15. Oxalate	(COO) ₂ ²⁻		
16. Chlorite	ClO ₂ ⁻				
17. Hypochlorite	ClO ⁻				
18. Chlorate	ClO ₃ ⁻				
19. Perchlorate	ClO ₄ ⁻				
20. Meta Aluminate	AlO ₂ ⁻				

MIXTURES

A mixture consists of two or more pure substances such as elements, compounds or both that retains their individual properties. Two or more elements combine together in an indefinite ratio is called a mixture.

CLASSIFICATION OF MIXTURES

HOMOGENEOUS MIXTURE

A mixture in which the constituents are uniformly distributed throughout is called a homogeneous mixture.

E.g. Sugar solution..... a mixture of sugar and water.

Petrola mixture of hydrocarbon fuels.

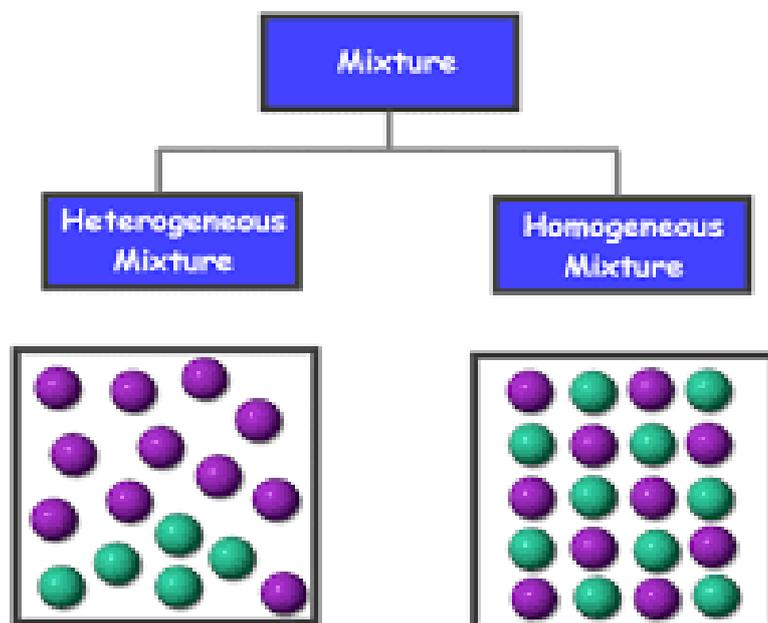
Brass..... a mixture of copper and zinc (alloy).

HETEROGENEOUS MIXTURE

A mixture in which constituents are distributed non-uniformly is called heterogeneous mixture.

E.g. a mixture of sand and salt.

a mixture of iron and sulphur.



TYPES OF MIXTURES EXAMPLES WITH CHART:

Table 2.4: Types of mixtures with Examples

S. No.	Types of mixtures	Examples
1.	Solid-solid (a) Homogeneous (b) Heterogeneous	Alloys like brass, bronze, steel Stones and sand, flour and grains
2.	Solid-liquid (a) Homogeneous (b) Heterogeneous	Salt in water, sugar in water Chalk in water, soil in water
3.	Solid-gas Heterogeneous	Smoke which contains soot or unburnt particles and gas
4.	Liquid-solid Heterogeneous	Water in sponge, water in flour
5.	Liquid-liquid (a) Homogeneous (b) Heterogeneous	Vinegar in water Oil in water
6.	Liquid-gas (a) Homogeneous (b) Heterogeneous	Moisture in air Mist, fog, cloud
7.	Gas-solid Homogeneous	Hydrogen in palladium
8.	Gas-liquid Homogeneous	Aerated drinks which contain carbon dioxide in water
9.	Gas-gas Homogeneous	Air

Heterogeneous mixtures are found in the form of suspension & emulsion.

Suspension

Type of mixtures in which a component is not dissolved completely into another component is called a suspension.

Ex: Chalk powder in water, dust in air.

Emulsion

A type of mixtures in which particles of one mixture are not dissolved but dispersed in another liquid is called an emulsion.

Ex: Oil in water.

After going through the above worksheet answer the following questions:

1. Differentiate between compound and mixture.
2. What is valency?
3. Give valency for the following cations & anions.
Calcium, oxygen, sulphate, iodine, nitrogen, bicarbonate.

4. Give examples of solid gas heterogeneous mixture, liquid-liquid homogeneous mixture.
5. Define: Suspension, emulsion.