

Key

Chemistry Review Sheet

1. What is **Chemistry**?

The study of matter

2. What does **WHMIS** stand for?

Workplace Hazardous Materials Info System

3. Label the following WHMIS symbols. (pg. 446)



Compressed Gas



Flammable



Oxidizing



Poisonous, Immediate



Toxic



Biohazard



Corrosive



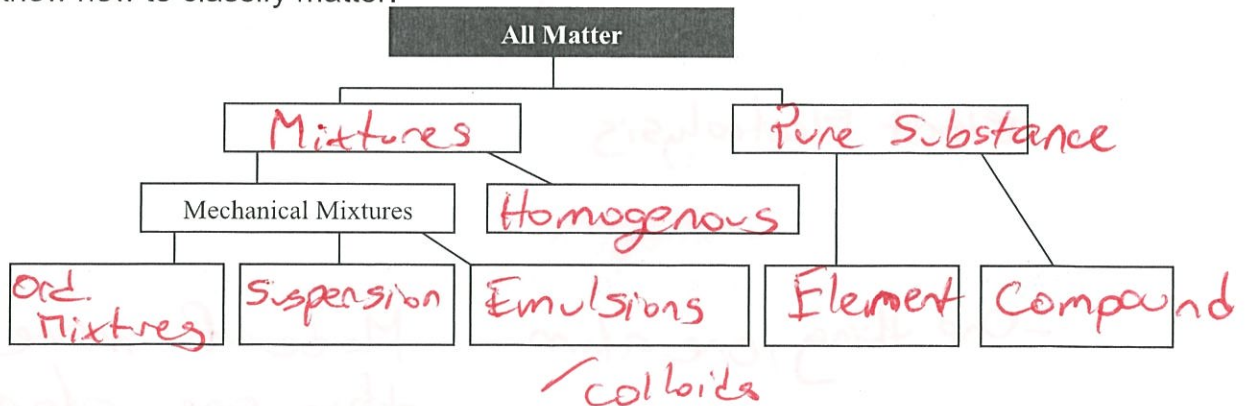
Reactive

4. A chemical which cause organic matter to break down is called caustic.

5. What are the differences between **SOLID**, **LIQUID**, and **GASES** (in terms of their particles)?

Solid	Liquid	Gas
close together strong attraction	Medium Distance	Weak attraction Small distance

6. Know how to classify matter.



7. What are the differences between **CHEMICAL REACTION** and **PHYSICAL CHANGES**?

C.C → new substance

P.C → Reversible

8. What are indicators that a chemical reaction has taken place? (seven indicators)

1. Bubbles
2. Smell
3. Precipitate
4. Temp Change
5. Colour change
6.
7.

9. Chemical reactions that take in or need energy to occur are called endothermic reactions. Chemical reactions that give off heat or energy are called exothermic ?

10. Fill in the following table

Reaction	Type of change (chemical or physical)	Type of reaction (endothermic, exothermic, or no reaction)
A light bulb is lit.	C	Exo Endo
A plant grows.	P/C	Endo
A hamburger is cooked.	C	Endo
Sugar dissolves in water.	P	No
Chlorine is added to a pool.	P	No

11. What are the other two parts of **DALTON'S ATOMIC THEORY**?

1. Everything is made of small particles called atoms.
2. Atoms of one type are equal in mass and size and differ in mass and size from different types of atoms.
3.
4.

12. The Law of Conservation of mass states that in chemical reaction, the chemicals in the reaction are not destroyed so the mass of the chemicals that you start with will be equal to the mass of the chemicals that you end with.

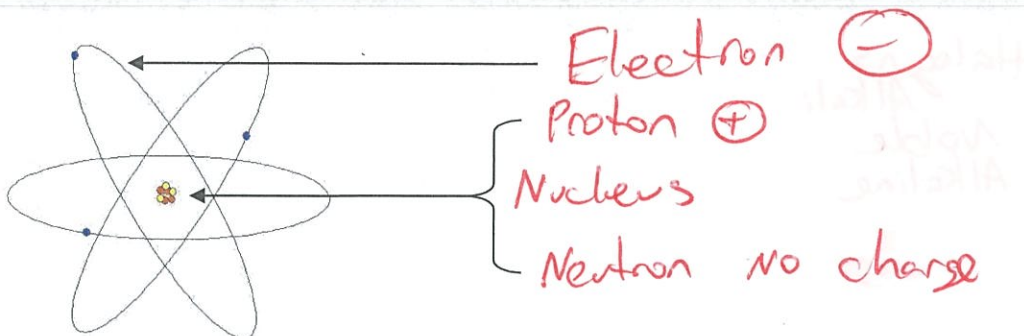
The Law of Definite Composition states that chemicals will always be put together in a definite way and if more or less elements are present then the chemical can change and become something else (ex. H_2O - water H_2O_2 - Hydrogen Peroxide)

13. Electrolysis is the process of decomposing compounds into their elements by using electricity.

14. What is the difference between:

Elements	Compounds
- One thing, one atom	Made of more than one atom

15. What are the parts of the atoms? Label the atom and identify the charge and mass of each.



16. For the following table, fill in the following blank information.

- the atomic number is equal to the number of protons in the nucleus
- the neutrons are found by subtracting the # of protons from the Mass Number

Element	Chromium	Zinc
Atomic number	24	30
Symbol	Cr	Zn
Mass number	52	65
Protons	24	30
Electrons	24	30
Neutrons	28	35

17. NaCO_3 (sodium carbonate):

is this an Atom or a Molecule? Molecule

is this an Element or Compound? Compd

how many elements are present and what are they? Na, C, O

how many atoms are present and how many of each? 1, 1, 3

18. Fill in the following table:

Type of element	State at room temperature	Appearance	Conductivity	Malleability and ductility
metalloids	solids	dull	Some	brittle; not ductile
non-metals	Mainly gas	dull	poor conductors of heat and electricity	Neither
metals	Solid	shiny	good conductors of heat and electricity	Both

19. What are **Chemical Families**? What are the four major families? Identify each based on the given properties.

A Chemical Family is	
4 Types of Chemical Families and their properties.	
<i>Halogens</i>	• reactive, missing one electron
<i>Alkali</i>	• incredibly reactive, require special storage
<i>Noble</i>	• inert
<i>Alkaline</i>	• fairly reactive metal

Identify where the four chemical families are found on the table.

Periodic Table of the Elements

1	IA	1	H	2	0	2	He																														
2	IIA	3	Li	4	Be	5	B	6	C	7	N	8	O	9	F	10	Ne																				
3	IIIA	11	Na	12	Mg	13	Al	14	Si	15	P	16	S	17	Cl	18	Ar																				
4	IVB	19	K	20	Ca	21	Sc	22	Ti	23	V	24	Cr	25	Mn	26	Fe	27	Co	28	Ni	29	Cu	30	Zn	31	Ga	32	Ge	33	As	34	Se	35	Br	36	Kr
5	VB	37	Rb	38	Sr	39	Y	40	Zr	41	Nb	42	Mo	43	Tc	44	Ru	45	Rh	46	Pd	47	Ag	48	Cd	49	In	50	Sn	51	Sb	52	Te	53	I	54	Xe
6	VIB	55	Cs	56	Ba	57	*La	72	Hf	73	Ta	74	W	75	Re	76	Os	77	Ir	78	Pt	79	Au	80	Hg	81	Tl	82	Pb	83	Bi	84	Po	85	At	86	Rn
7	VII	87	Fr	88	Ra	89	+Ac	104	Rf	105	Ha	106	Sg	107	Ms	108	Hs	109	Mt	110	111	112	113														

* Lanthanide Series

58	59	60	61	62	63	64	65	66	67	68	69	70	71
Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu

+ Actinide Series

90	91	92	93	94	95	96	97	98	99	100	101	102	103
Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr

20. Who developed the modern **Periodic Table**? Mendeleev

21. The elements on the periodic table are placed in order of their Atomic Number. What is the **Atomic Number** equal to? protons

22. How are **Groups** arranged in the periodic table? 17

23. How are the **Periods** arranged? Horizontally

24. What is the difference between **Molecular Compounds** and **Ionic Compounds**? List three things.

(see pg. 136)

<u>Molecular</u>	<u>Ionic</u>
- 2 non metals	- Metal + non metal
- Doesn't dissolve	- Dissolves
- Not conductive	- conductive

25. When naming molecular or ionic compounds remember the following rules:

- Identify as Molecular (non-metal/non-metal) or Ionic (metal/non-metal)
- Write out both chemicals but change the ending of the second to -ide.
- If it's Ionic, you are done. If it's Molecular, you need to add the prefixes to indicate the number of each elements (*mono- only goes to the second chem*)

Chemical	What's in it? (metals/non-metals)	Ionic or Molecular?	Name
K ₂ S	Metals + nonmetals	I	Potassium Oxide
MgCl ₂	Metals + nonmetals	I	Magnesium Chloride
C ₃ H ₈	2 nonmetals	M	TriCarbon Octa hydride

26. What are five ways you can speed up a chemical reaction? What are five ways to slow down a chemical reaction?

1. Catalyst
2. Heat
3. Stir
4. ↑ concentration
5. ↑ surface area

1. Inhibit
2. Cool
3. Don't stir
4. ↓ concentration
5. ↓ surface area

27. A Catalyst is a chemical that will speed up a reaction without being used up in the process. An example of a natural occurring one of these in our bodies is an enzyme.

28. A chemical that we add to slow down the rate of a reaction is an inhibitor (ex. This is added to headache medication to allow its effects to last longer and not get used up to quickly)

29. When metals begin to rust, we refer to this process as corrosion.
When an object burns, we refer to this reaction as combustion.
Both reactions require oxygen to be present.

30. Galvanization is the name of the process in which we coat a metal with a thin coat of zinc in order to slow down the rusting process.

