

Metals Summary Notes

By the end of this topic you should be able to state

1. Metals are elements found on the left hand side of the Periodic Table

The image shows a standard periodic table of elements. The elements are color-coded into three regions: Metals (blue), Metalloids (green), and Nonmetals (orange). The Metal region covers the left side of the table, including the alkali metals, alkaline earth metals, transition metals, and post-transition metals. The Metalloid region is a narrow strip between the metals and nonmetals, including elements like Boron, Silicon, and Arsenic. The Nonmetal region covers the right side of the table, including the halogens and noble gases. The lanthanide and actinide series are shown at the bottom of the table.

1																	18
1																	2
3	4											5	6	7	8	9	10
11	12											13	14	15	16	17	18
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
55	56	57-71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86
87	88	89-103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118
57	58	59	60	61	62	63	64	65	66	67	68	69	70	71			
89	90	91	92	93	94	95	96	97	98	99	100	101	102	103			

2. Typical metal properties
 - (i) conduct electricity and heat
 - (ii) high melting point - hence solid at room temperature
 - (iii) ductile - can be drawn into wires
 - (iv) malleable - can be hammered into shape

3. Word equations can be written to show the reaction of metals with oxygen, water, and dilute acids:

(i) metal + oxygen $\rightarrow$ metal oxide

Example

Magnesium + oxygen $\rightarrow$ magnesium oxide

(ii) metal + water $\rightarrow$ metal hydroxide + hydrogen

Example

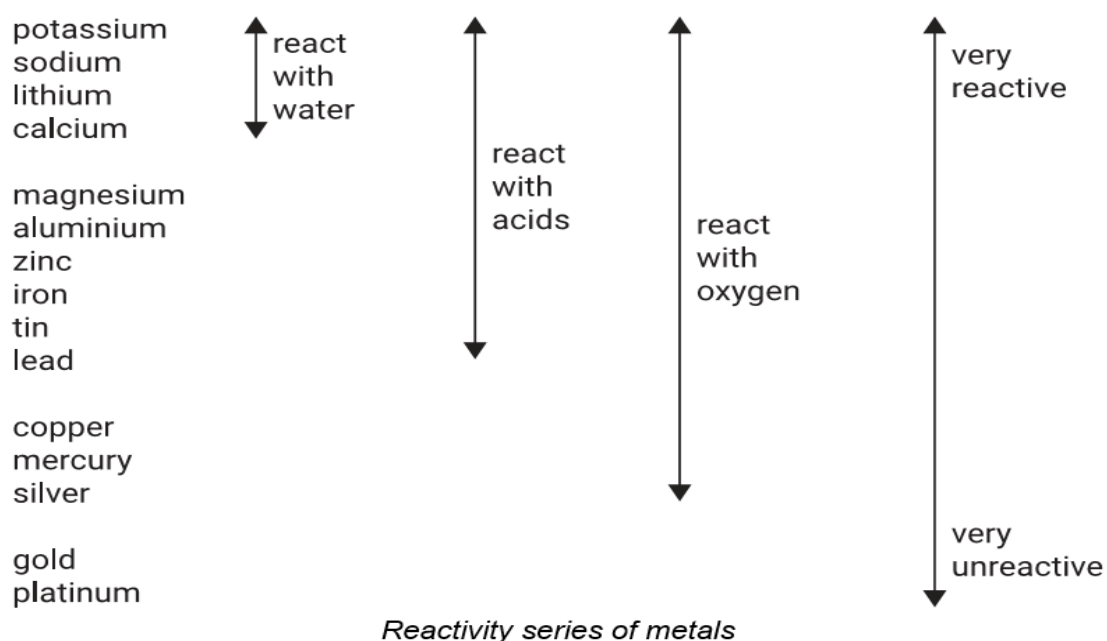
Calcium + water $\rightarrow$ calcium hydroxide + hydrogen

(iii) metal + dilute acid $\rightarrow$ salt + hydrogen

Example

Zinc + sulfuric acid $\rightarrow$ zinc sulfate + hydrogen

4. Metals can be arranged in order of reactivity by comparing the rates at which they react



5. Metals can be used to produce soluble salts. Excess metal is added to the appropriate acid, the mixture is filtered and the filtrate evaporated to dryness

