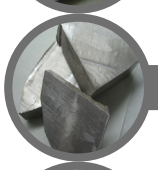
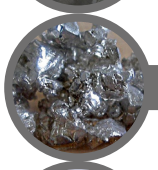
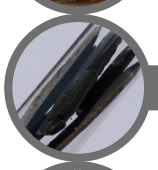
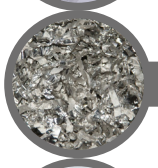
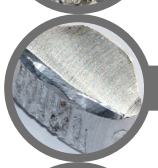
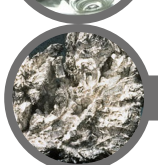
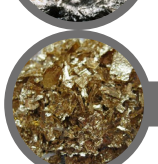
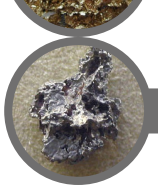
THE METAL REACTIVITY SERIES

Metals can be ordered according to their reactivities; the table below shows a selection of common metals and their reactivities with water, air, and dilute acids. A more reactive metal will displace a less reactive metal from a compound.

METAL NAME & SYMBOL	REACTION WITH COLD WATER	REACTION WITH STEAM	REACTION WITH AIR/OXYGEN	REACTION WITH DILUTE ACIDS	EXTRACTION METHOD
	Produces metal hydroxide & hydrogen	*Produces metal oxide & hydrogen*	*Produces metal oxide*	*Produces metal salt & hydrogen*	
 POTASSIUM (K)	✓ VIOLENT REACTION	✓ VIOLENT REACTION	✓ REACTS READILY	✓ VIOLENT REACTION	⚡ ELECTROLYSIS OF MOLTEN METAL ORE
 SODIUM (Na)	✓ STRONG REACTION	✓ VIOLENT REACTION	✓ REACTS READILY	✓ VIOLENT REACTION	⚡ ELECTROLYSIS OF MOLTEN METAL ORE
 CALCIUM (Ca)	✓ MODERATE REACTION	✓ VIOLENT REACTION	✓ REACTS READILY	✓ VIOLENT REACTION	⚡ ELECTROLYSIS OF MOLTEN METAL ORE
 LITHIUM (Li)	✓ MODERATE REACTION	✓ STRONG REACTION	✓ REACTS READILY	✓ VIGOROUS REACTION	⚡ ELECTROLYSIS OF MOLTEN METAL ORE
 MAGNESIUM (Mg)	✓ VERY SLOW REACTION	✓ STRONG REACTION	✓ SLOW REACTION	✓ VIGOROUS REACTION	⚡ ELECTROLYSIS OF MOLTEN METAL ORE
 ALUMINIUM (Al)	✗ NO REACTION	✓ MODERATE REACTION	✓ SLOW REACTION	✓ MODERATE REACTION	⚡ ELECTROLYSIS OF MOLTEN METAL ORE
(Carbon)					
 ZINC (Zn)	✗ NO REACTION	✓ MODERATE REACTION	✓ REACTS WHEN HEATED	✓ MODERATE REACTION	C METAL ORE SMELTED WITH CARBON
 IRON (Fe)	✗ NO REACTION	✓ REVERSIBLE REACTION	✓ REACTS WHEN HEATED	✓ MODERATE REACTION	C METAL ORE SMELTED WITH CARBON
 NICKEL (Ni)	✗ NO REACTION	✓ SLOW REACTION	✓ REACTS WHEN HEATED	✓ SLOW REACTION	C METAL ORE SMELTED WITH CARBON
 TIN (Sn)	✗ NO REACTION	✗ NO REACTION	✓ REACTS WHEN HEATED	✓ SLOW REACTION	C METAL ORE SMELTED WITH CARBON
 LEAD (Pb)	✗ NO REACTION	✗ NO REACTION	✓ REACTS WHEN HEATED	✓ SLOW REACTION	C METAL ORE SMELTED WITH CARBON
(Hydrogen)					
 COPPER (Cu)	✗ NO REACTION	✗ NO REACTION	✓ REACTS WHEN HEATED	✗ NO REACTION	🔥 HEAT OR PHYSICAL EXTRACTION
 MERCURY (Hg)	✗ NO REACTION	✗ NO REACTION	✓ REVERSIBLE REACTION	✗ NO REACTION	🔥 HEAT OR PHYSICAL EXTRACTION
 SILVER (Ag)	✗ NO REACTION	✗ NO REACTION	✗ NO REACTION	✗ NO REACTION	🔥 HEAT OR PHYSICAL EXTRACTION
 GOLD (Au)	✗ NO REACTION	✗ NO REACTION	✗ NO REACTION	✗ NO REACTION	🔥 HEAT OR PHYSICAL EXTRACTION
 PLATINUM (Pt)	✗ NO REACTION	✗ NO REACTION	✗ NO REACTION	✗ NO REACTION	🔥 HEAT OR PHYSICAL EXTRACTION