

Single replacement reactions

Use these two charts to determine if the one element can replace the other element.

Activity Series of Metals

	Name	Symbol	These can replace hydrogen in water and acids
	Lithium	Li	
	Potassium	K	
	Barium	Ba	
	Calcium	Ca	
	Sodium	Na	These can replace hydrogen in acids only
	Magnesium	Mg	
	Aluminum	Al ^v	
	Zinc	Zn	
	Iron	Fe	
	Nickel	Ni	
	Tin	Sn	These can not replace hydrogen in water or acid
	Lead	Pb	
	(Hydrogen)	H	
	Copper	Cu	
Mercury	Hg		
Silver	Ag		
Gold	Au		

Activity series of nonmetals

	Element
	F ₂
	Cl ₂
	Br ₂
	I ₂

Use this table to determine which compound forms a precipitate

Table A-7 Solubilities of Compounds at 25°C and 1 atm

	acetate	bromide	carbonate	chlorate	chloride	chromate	hydroxide	iodide	nitrate	oxide	perchlorate	phosphate	sulfate	sulfide
aluminum	S	S	I	S	S	S	I	S	S	I	S	I	S	d
ammonium	S	S	S	S	S	S	S	S	S	-	S	S	S	S
barium	S	S	I	S	S	I	S	S	S	sS	S	I	I	d
calcium	S	S	I	S	S	S	S	S	S	sS	S	I	sS	I
copper(II)	S	S	I	S	S	S	I	S	S	I	S	I	S	I
iron(II)	S	S	I	S	S	S	I	S	S	I	S	I	S	I
iron(III)	S	S	I	S	S	S	I	S	S	I	S	I	sS	d
lithium	S	S	sS	S	S	S	S	S	S	S	S	sS	S	S
magnesium	S	S	I	S	S	S	I	S	S	I	S	I	S	d
potassium	S	S	S	S	S	S	S	S	S	S	S	S	S	S
silver	sS	I	I	S	I	I	-	I	S	I	S	I	sS	I
sodium	S	S	S	S	S	S	S	S	S	S	S	S	S	S
strontium	S	S	I	S	S	I	S	S	S	S	S	I	I	I
zinc	S	S	I	S	S	S	I	S	S	I	S	I	S	I

Key: S = soluble (aq)
I = insoluble (s)

d = decomposes in water

sS = slightly soluble - = no such compound