



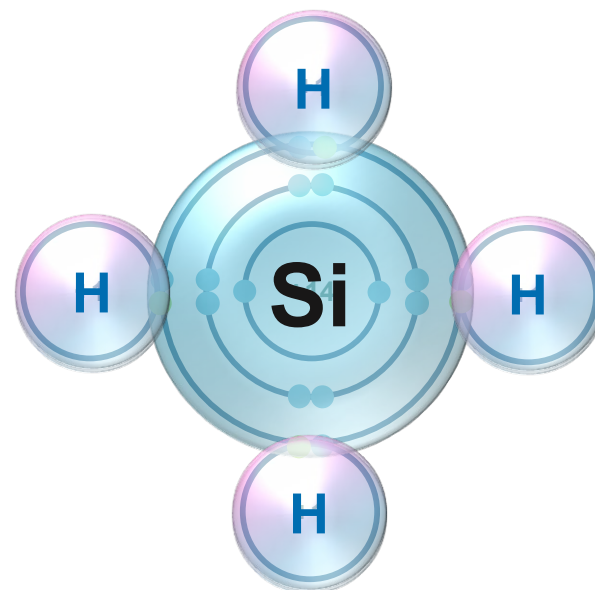
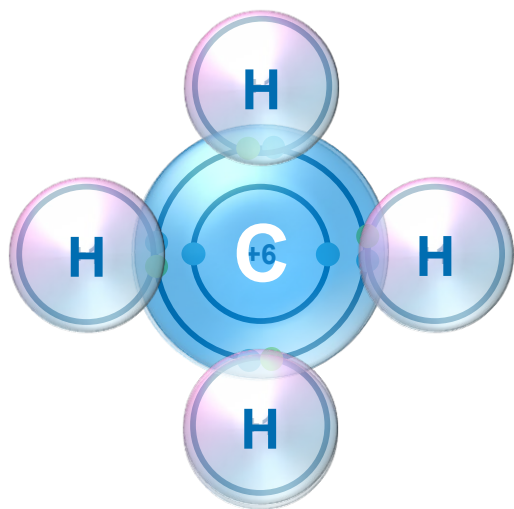
From *Education
in Chemistry*
rsc.li/2UTm9Db



Chasing the glow

Demonstration of the
pyrophoricity of silanes

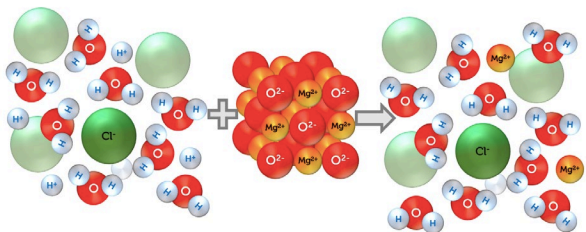
eic



Covalent bond

Electrostatic attraction between shared electrons and the nuclei of their atoms

Acids + metal oxides

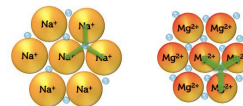


hydrochloric acid + magnesium oxide \Rightarrow magnesium chloride + water
 $2\text{HCl} + \text{MgO} \Rightarrow \text{MgCl}_2 + \text{H}_2\text{O}$

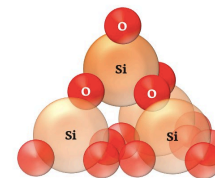
Structure and bonding

Metallic

Stronger electrostatic force between delocalised electrons and metal ions in Mg



search:
Exhibition Chemistry
'Finding the NaK'



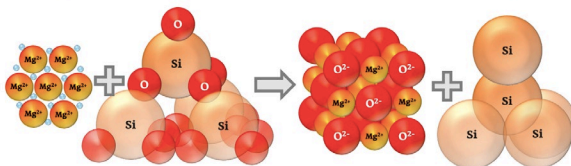
Giant covalent

Strong covalent bonds between all atoms

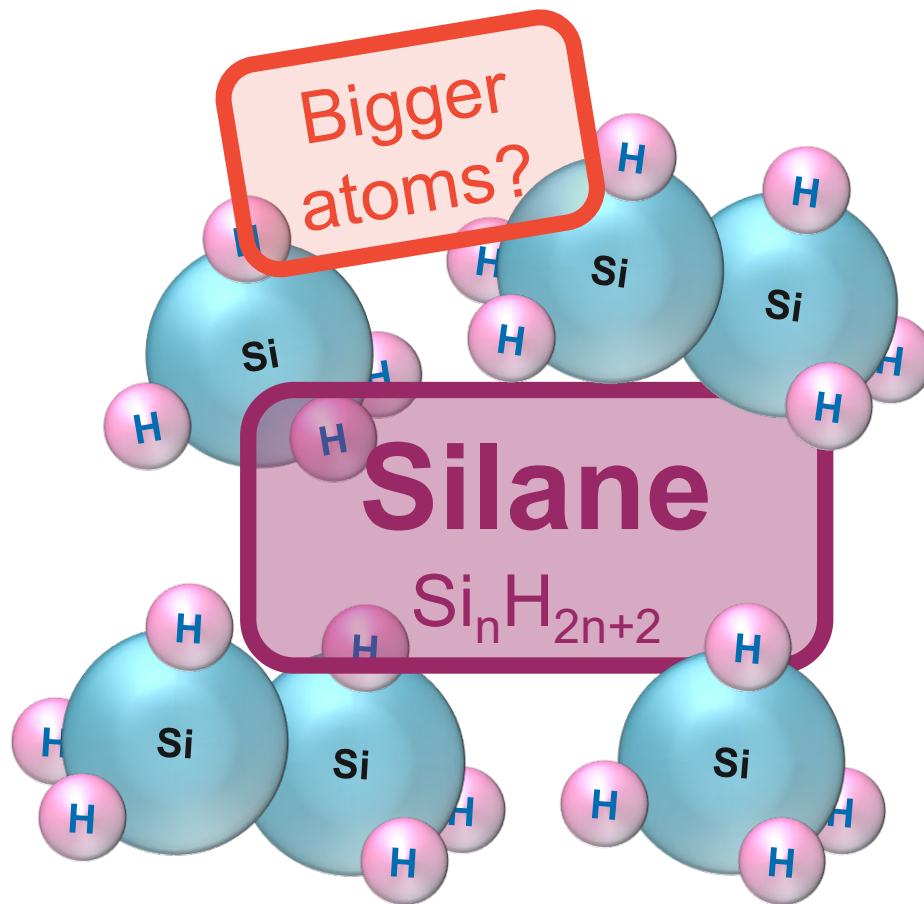
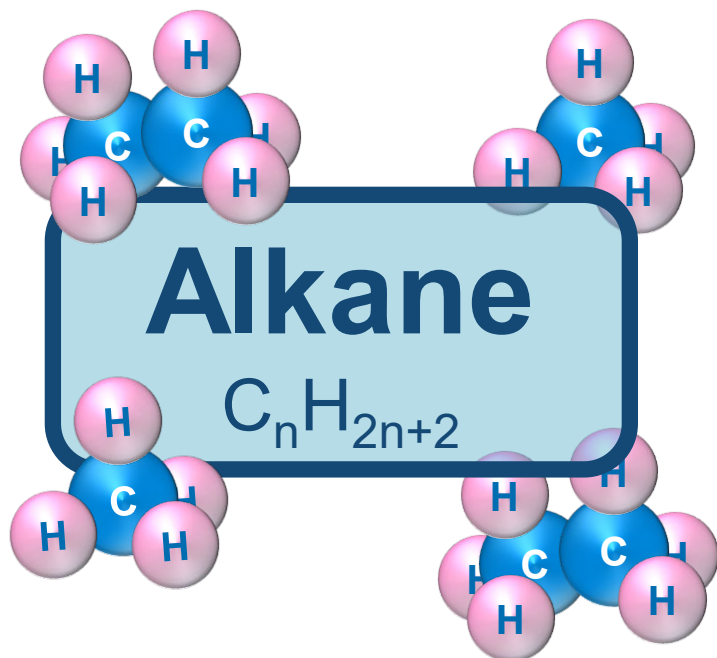
Reduction and oxidation

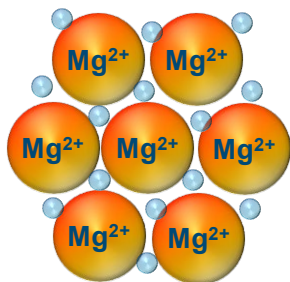
Magnesium reduces silicon dioxide

The more reactive magnesium 'steals' the oxygen



magnesium + silicon dioxide \Rightarrow magnesium oxide + silicon
 $2\text{Mg} + \text{SiO}_2 \Rightarrow 2\text{MgO} + \text{Si}$





Magnesium

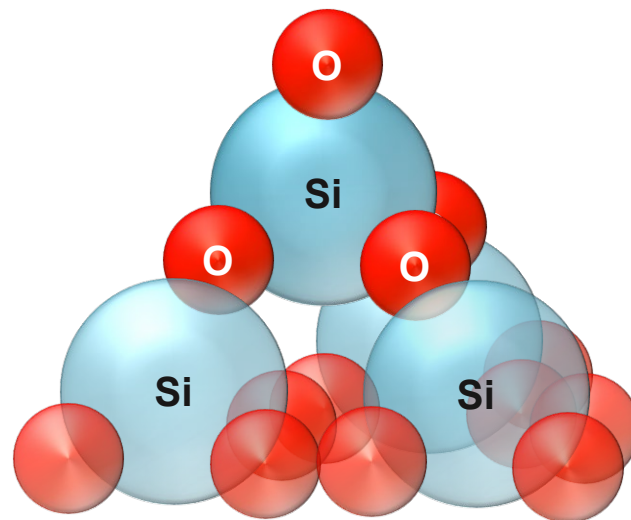
Mg

Metallic structure

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Steaming ahead with magnesium



Silica

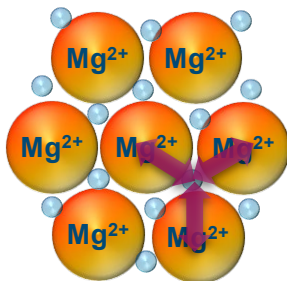
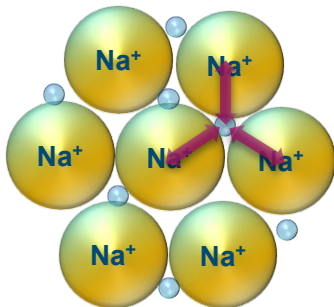
(silicon dioxide)

SiO_2

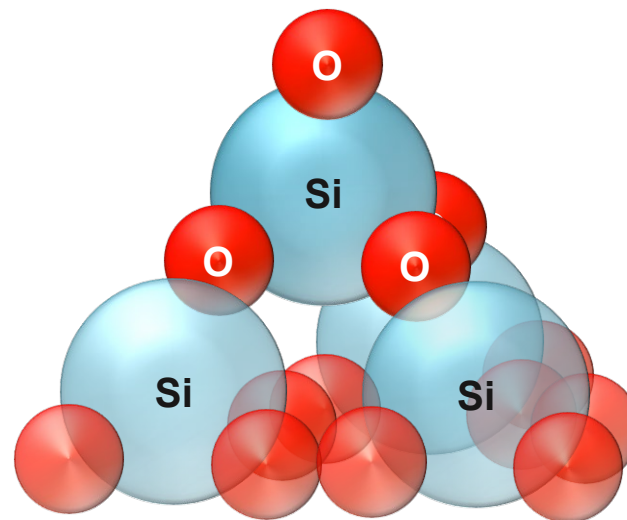
Giant covalent structure

Metallic

Stronger electrostatic force
between delocalised electrons
and metal ions in Mg



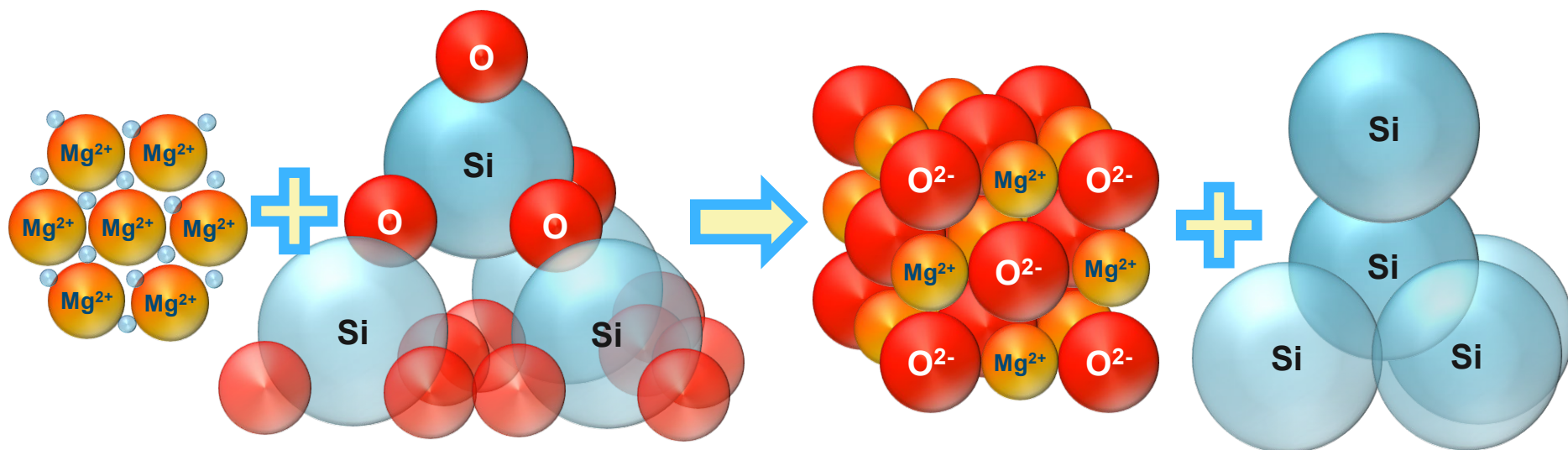
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Finding the NaK



Giant covalent
Strong covalent bonds
between all atoms

Magnesium **reduces** silicon dioxide

The more reactive magnesium 'steals' the oxygen

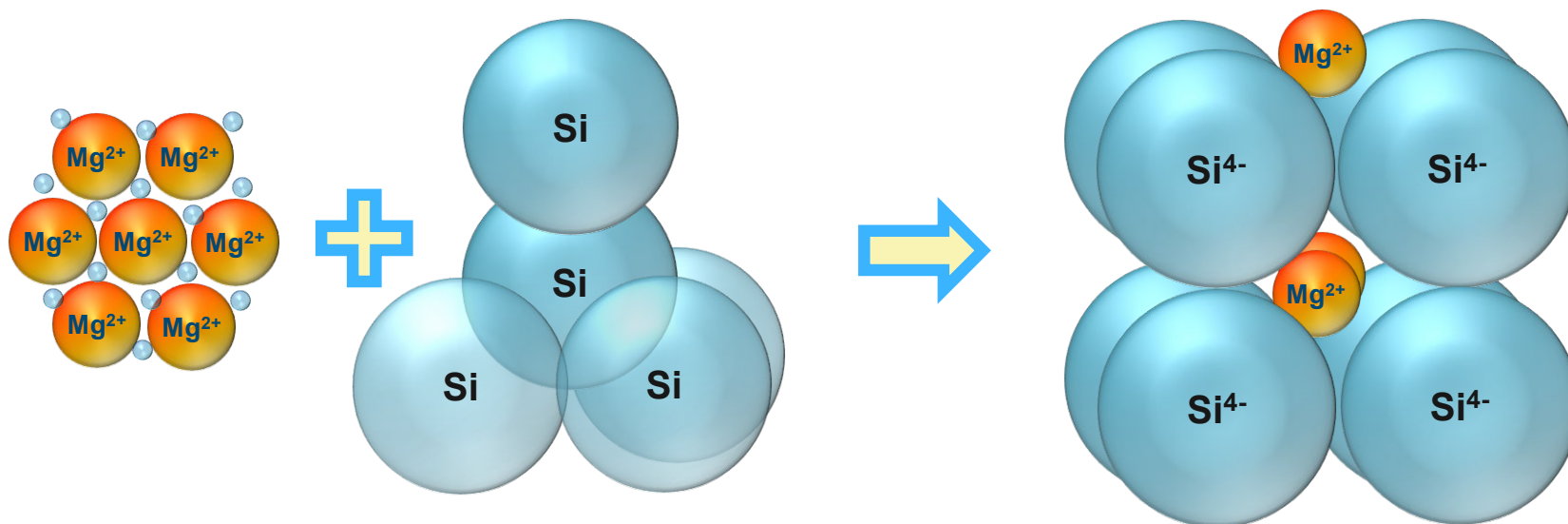


magnesium + silicon dioxide \Rightarrow magnesium oxide + silicon



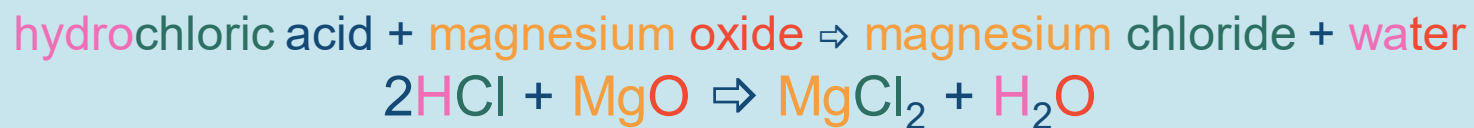
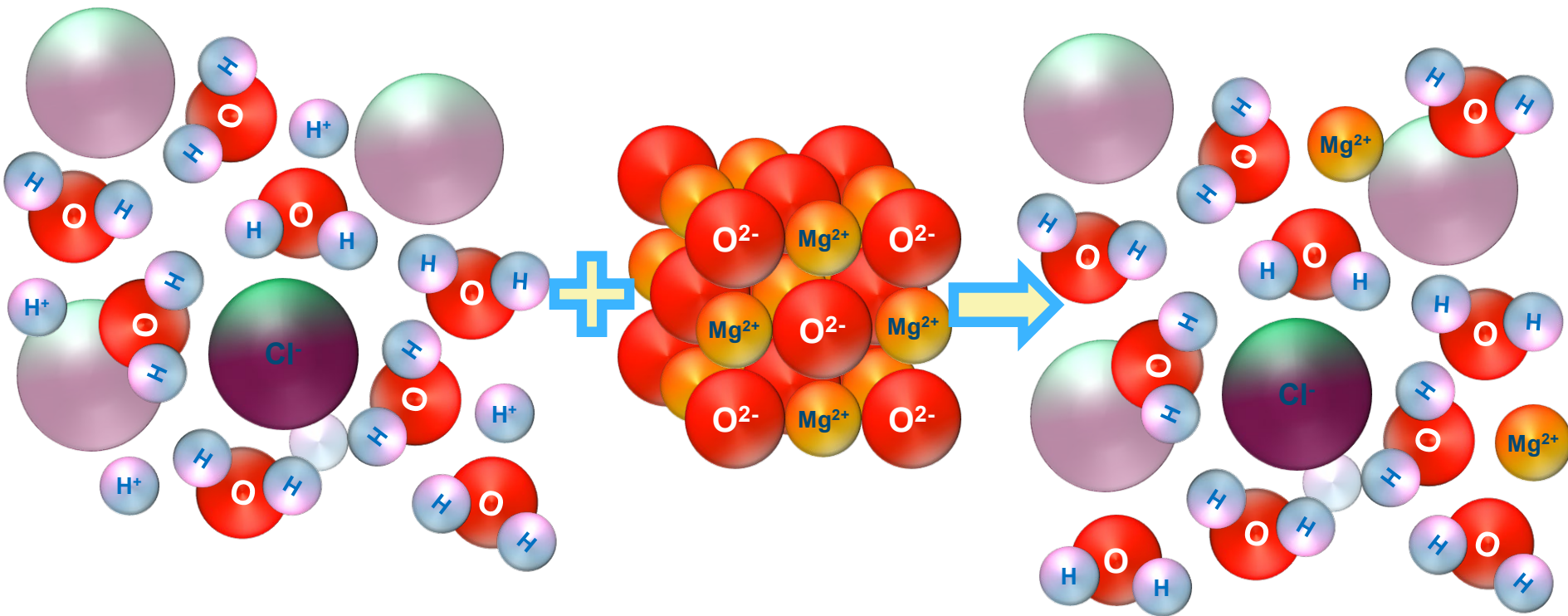
Magnesium **reduces** silicon

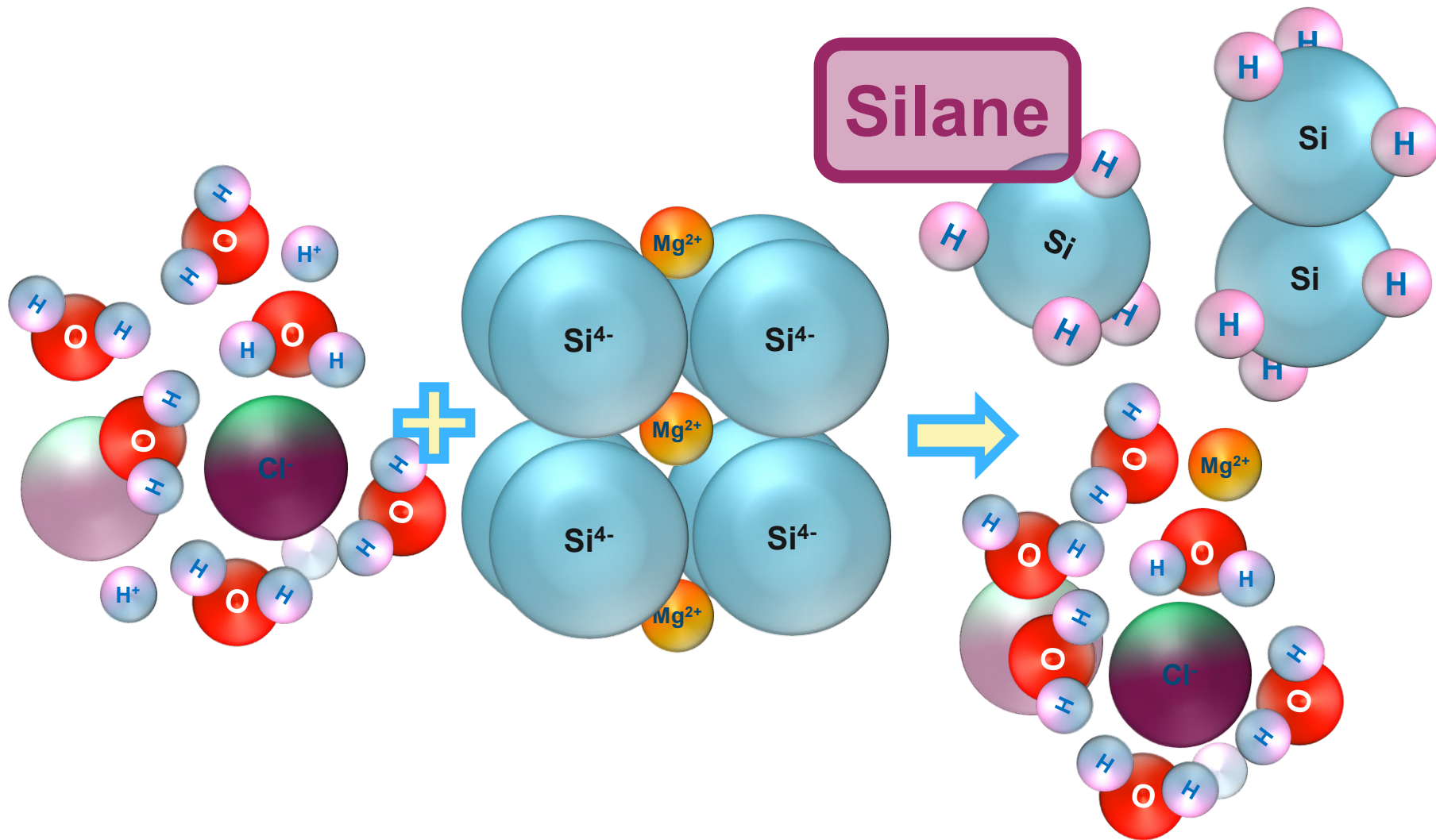
Magnesium gives electrons to the silicon

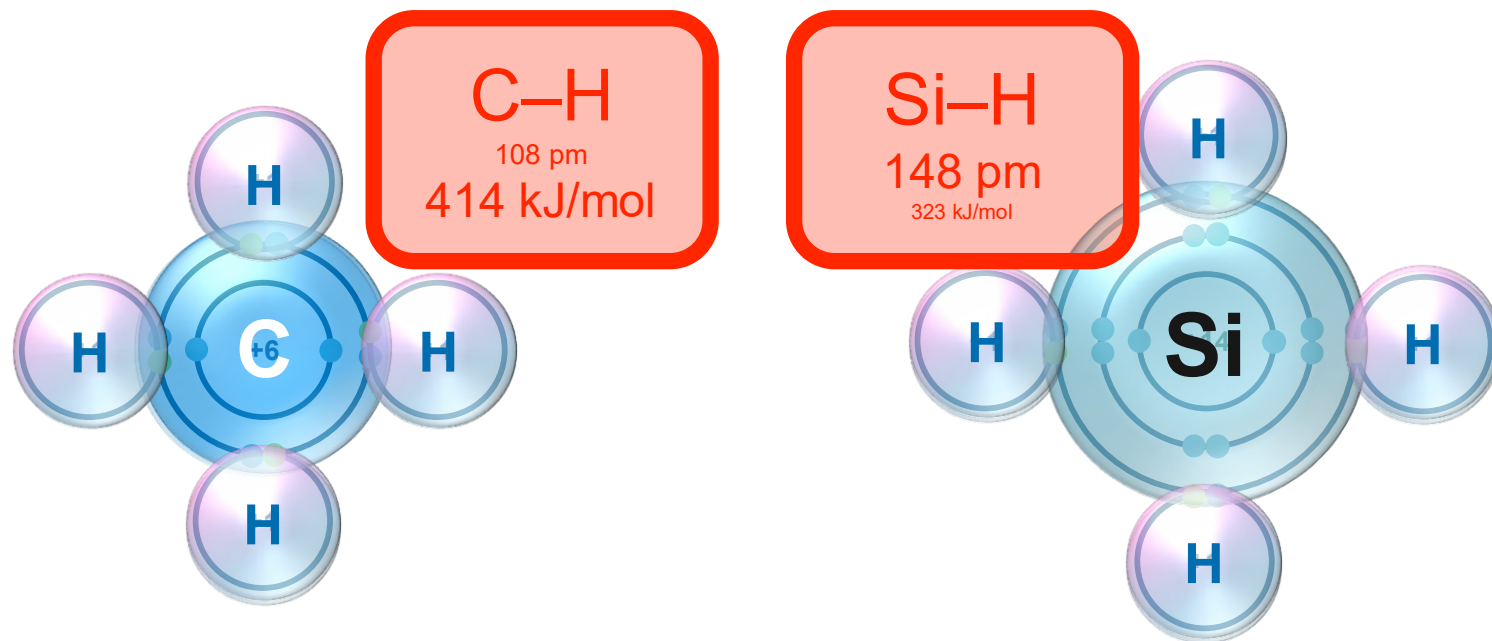


magnesium + silicon \Rightarrow magnesium silicide









Longer bonds are weaker

