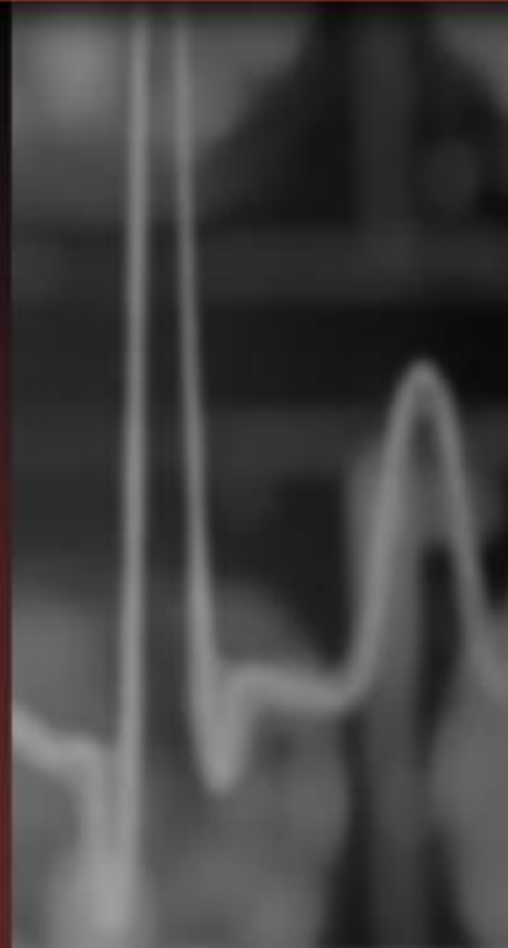
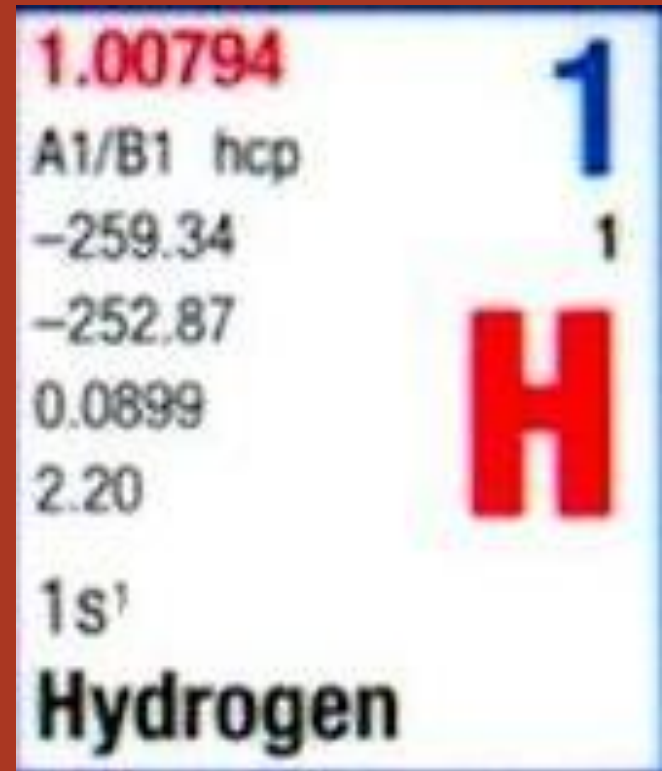


# Elements



# Chemical symbols

- Usually consist of one or two letters
- Ex: H -> Hydrogen    Hg -> Mercury



1.00794	1
A1/B1 hcp	1
-259.34	
-252.87	
0.0899	
2.20	
1s <sup>1</sup>	
<b>Hydrogen</b>	

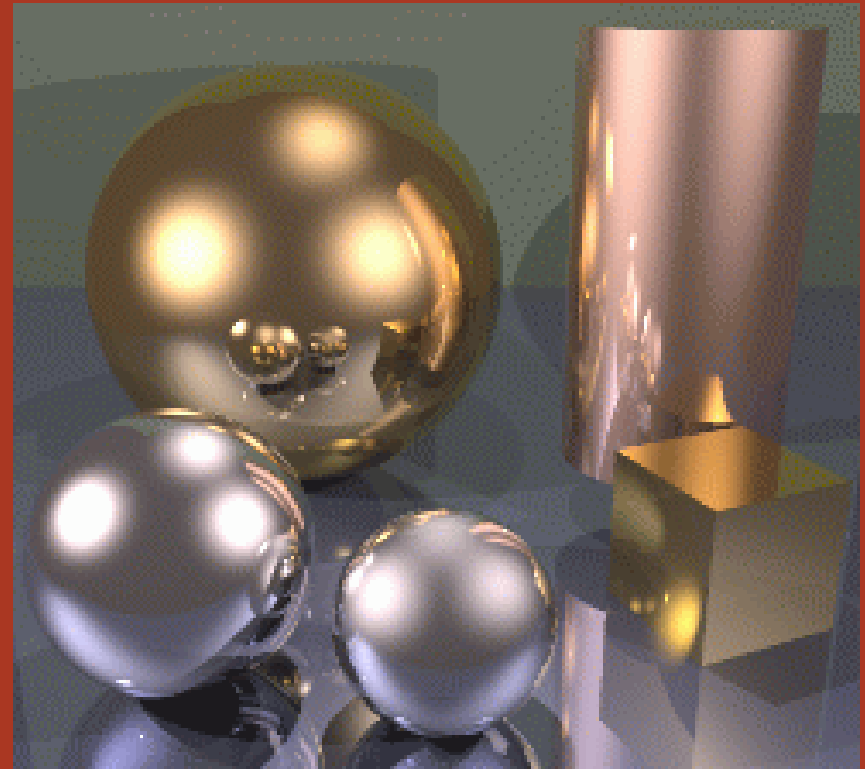
# Chemical Properties

- Describes a substance's ability to react chemically with other substances to form new products



# Metals

- Solid, shiny, malleable and ductile,
- Good conductors of heat and electricity



# Non-metals

- Usually gaseous or fragile solids, especially when at room temperature



Chlorine gas

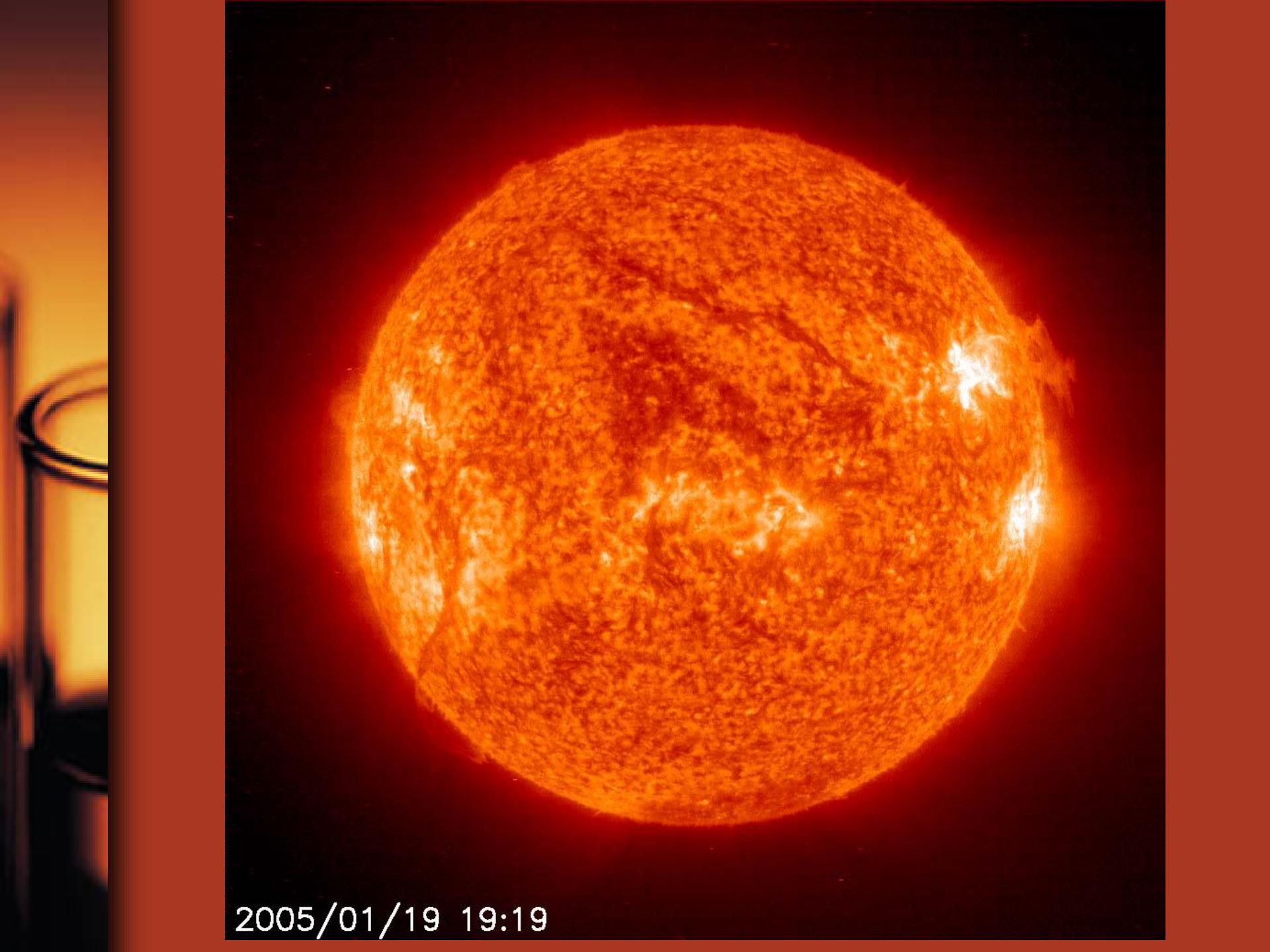
# Hydrogen (H)

- Colourless, odourless, tasteless
- Highly flammable and reactive
- Makes up most of the Sun as well as other stars
- Makes up over 90% of the atoms in the universe
- Most of the H on Earth combines with O to form H<sub>2</sub>O
- Less dense than air → used to inflate weather balloons

# Hydrogen (H)

Ionized  
hydrogen

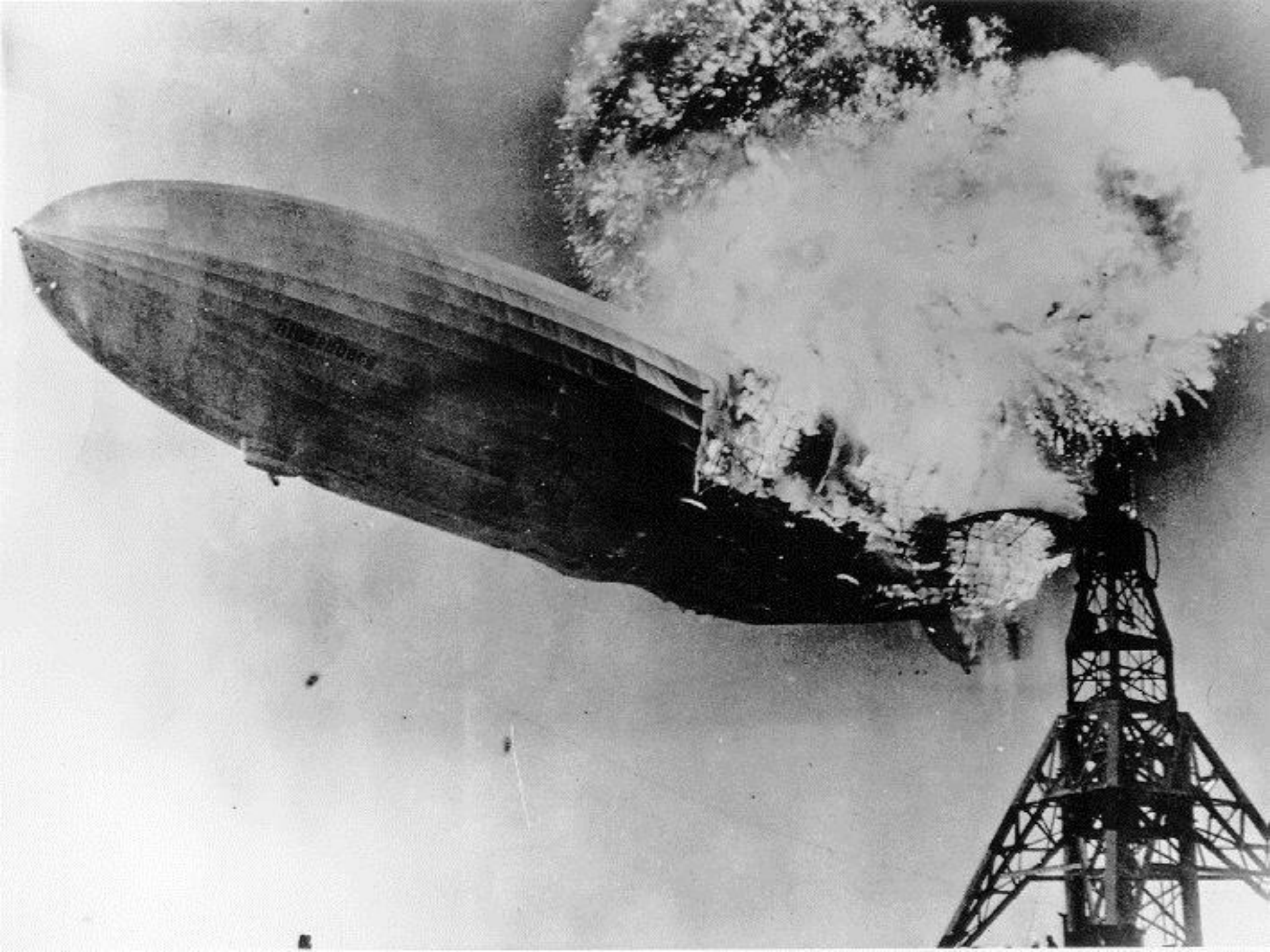




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# Iron (Fe)

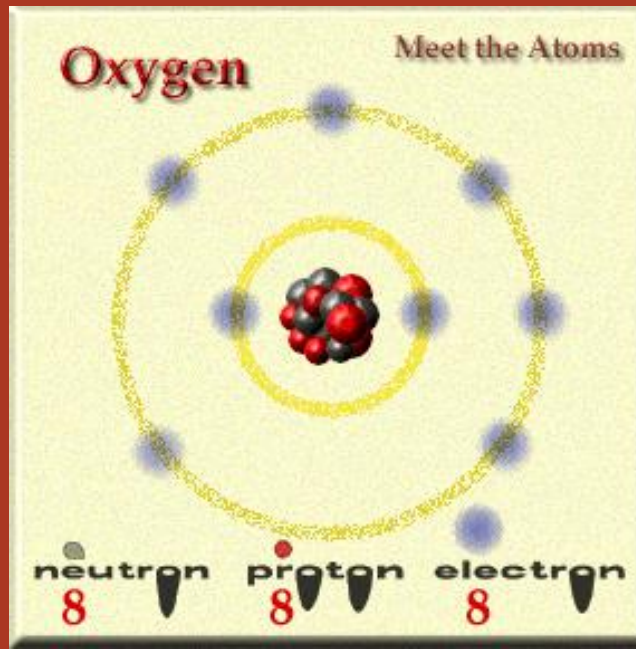
- Robust metal (even more so when combined with carbon → steel)
- Rusts when combined with  $O_2$  and  $H_2O$  (oxidization)



**Iron pyrite**

# Oxygen (O)

- Non-metal
- Necessary for all life
  - Used to burn up sugar to provide energy in the cell
- Makes up 21% of our atmosphere
- For the past 3 billion years, oxygen has been produced by plants



# Sodium (Na)

- Unique metal because of its softness
- Reacts violently in water and produces a toxic gas.
  - » Sodium + water gives off a large quantity of energy and sodium gas in the form of an explosion



# Chlorine (Cl)

- Yellowish-green gas
- Toxic in large quantities
- Used as a disinfectant (pools, hot tubs)



**What happens when you combine sodium and chlorine? Keep in mind that these are both toxic!**



**+**



**=**



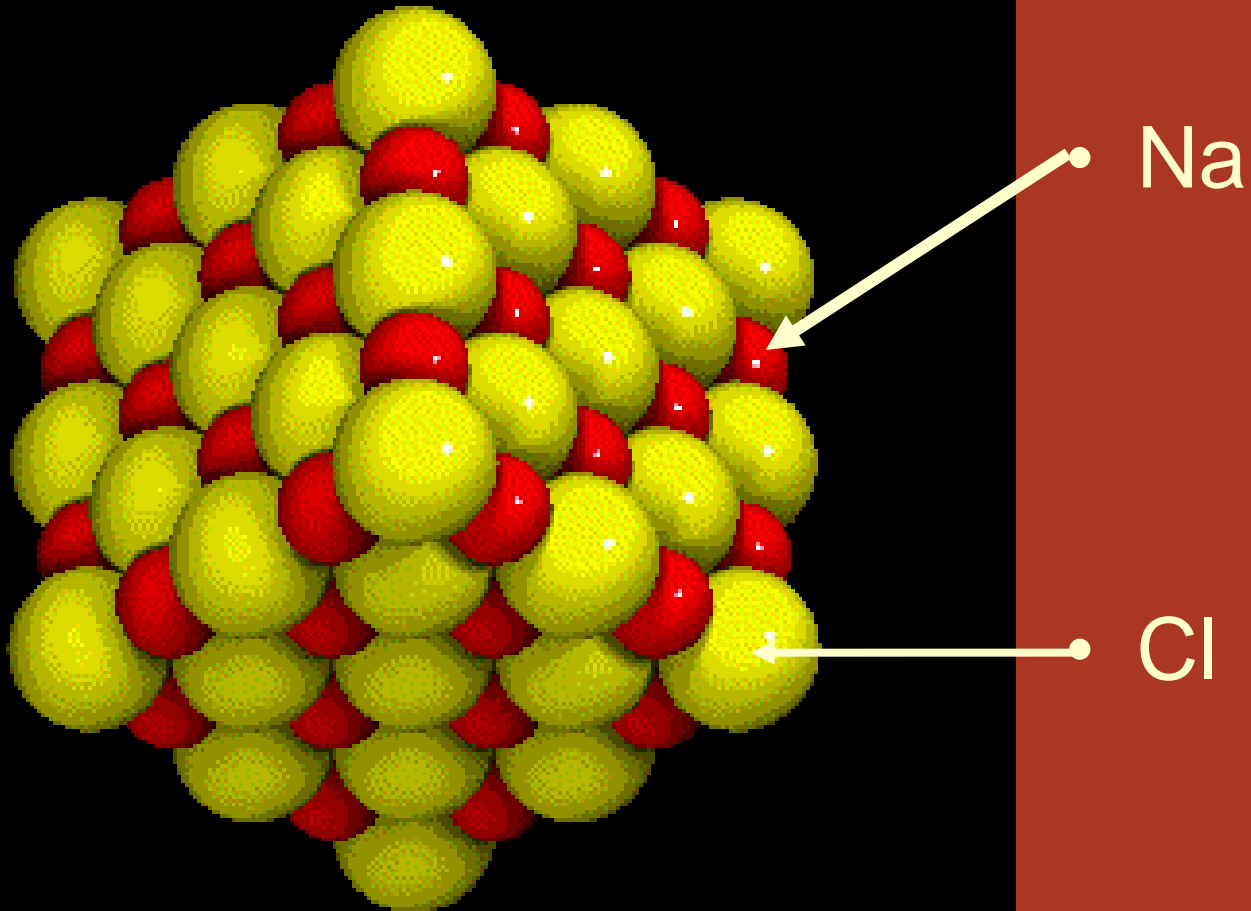




**Why does salt take up a cubic shape?**



# NaCl (table salt)



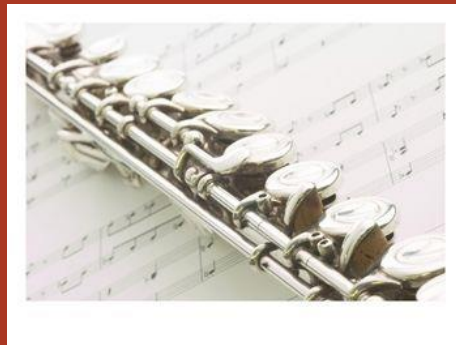
# Mercury (Hg)

- Toxic metal
- The only metal that is liquid at room temperature



# Silver (Ag)

- White metal with several physical properties that make it useful and commercial
- Ex : jewellery, money, musical instruments, technological instruments



# Silicon

- 2<sup>nd</sup> most abundant element in the Earth's crust (Oxygen is the most common)
- A métalloïd
- A semi-conducteur (conducts electricity, but poorly conducts heat)
- Used to build computer chips and components
- With oxygen, forms quartz and opal

