

STATES OF MATTER

- The Four States of Matter

- Four States

- Solid
- Liquid
- Gas
- Plasma

STATES OF MATTER

- < Based upon particle arrangement
- < Based upon energy of particles
- < Based upon distance between particles

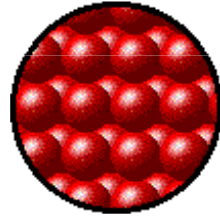


Kinetic Theory of Matter
Matter is made up of particles which are in continual random motion.

STATES OF MATTER SOLIDS

- Particles of solids are tightly packed, vibrating about a fixed position.

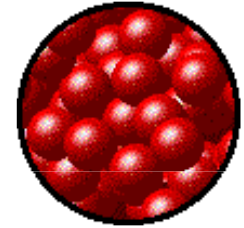
- Solids have a definite shape and a definite volume.



STATES OF MATTER LIQUID

- Particles of liquids are tightly packed, but are far enough apart to slide over one another.

- Liquids have an indefinite shape and a definite volume.



STATES OF MATTER GAS

- Particles of gases are very far apart and move freely.

PHASE CHANGES

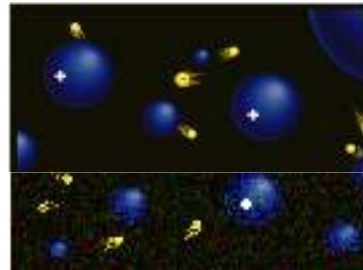
Description of Phase Change	Term for Phase Change	Heat Movement During Phase Change
Liquid to gas	Vaporization, which includes boiling and evaporation	Heat goes into the liquid as it vaporizes.
Gas to liquid	Condensation	Heat leaves the gas as it condenses.
Solid to gas	Sublimation	Heat goes into the solid as it sublimates.

But what happens if you raise the temperature to super-high levels...
between
1000°C and 1,000,000,000°C ?

Will everything
just be a gas?

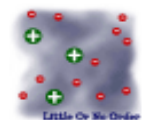
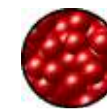
STATES OF MATTER PLASMA

- A plasma is an ionized gas.
- A plasma is a very good conductor of electricity and is affected by magnetic fields.
- Plasmas, like gases have an indefinite shape and an indefinite volume.



- Plasma is the common state of matter

STATES OF MATTER



Some places where plasmas are found...

1. Flames



2. Lightning

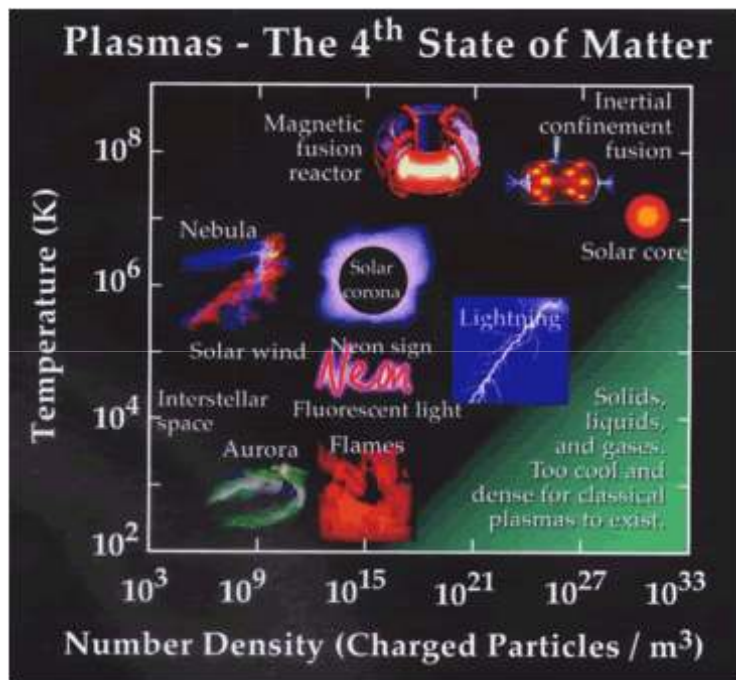


3. Aurora (Northern Lights)

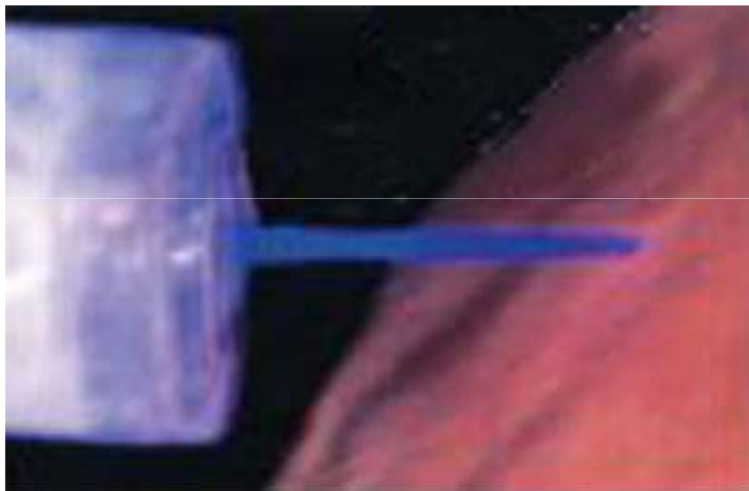


The Sun is an example of a star in its plasma state





COLD PLASMA PEN



Source: Old Dominion University