

Chemistry- 12 ADV

LESSON-1 U-1

Energy

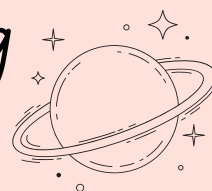


Hi everyone

I made this file to help you in your study

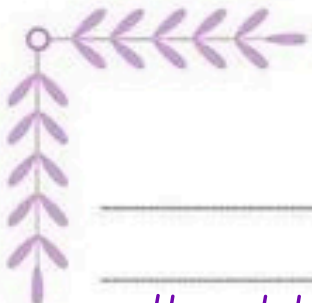
Hope its helpful!

Thanks for reading



Done By: 





Energy

is the ability to do work or produce heat

Two basic forms:

1-potential energy

Potential energy:

-Due to the composition of an object

Depends on:

1-Type of atom

2- number and type of bonds

3- Arrangement of an atom

2-kinetic energy

Kinetic energy:

-Due to the motion

Is:

1-Directly related to the constant random motion of a particle

2- Proportional to temperature



Law of conservation of energy

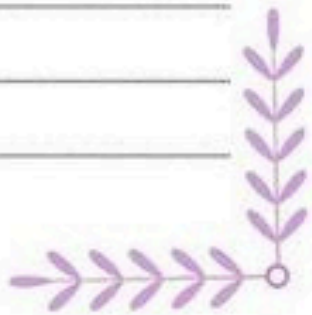
(First law of thermodynamics)

Energy can't be created or destroyed $\text{energy of products} = \text{energy of reactants}$

chemical potential energy:

-energy stored in object due to its composition

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Heat



Heat:

-Flow of energy from warmer object to cooler object.

Measuring heat:

-calorie: The amount of energy required to raise one gram of substance by 1°C

-SI unit of energy and heat is (joule)



conversion factors

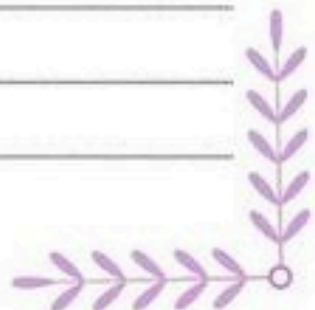
$$1\text{ cal} = 4.184\text{ J}$$

$$1\text{ Cal} = 1000\text{ cal} = \text{kcal}$$

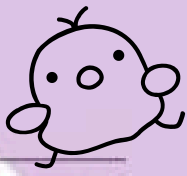
$$1\text{ Cal} = 4184\text{ J}$$



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Specific heat



- The amount of heat required to raise the temperature of 1g of a substance by one degree Celsius (1°C)
- Unit of specific heat: $\text{J}/(\text{g} \cdot ^{\circ}\text{C})$
- each substance have its own specific heat
- Small specific heat = less energy = Heat and cool quickly
- Large specific heat = more energy = Heat and cool slowly

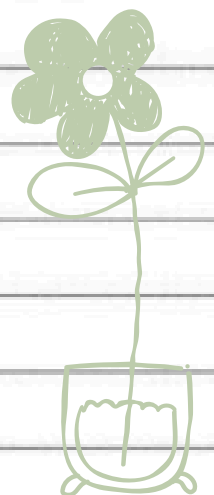
$$q = c \times m \times \Delta T$$

q = energy

c = specific heat

m = mass

T = temprature in C



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