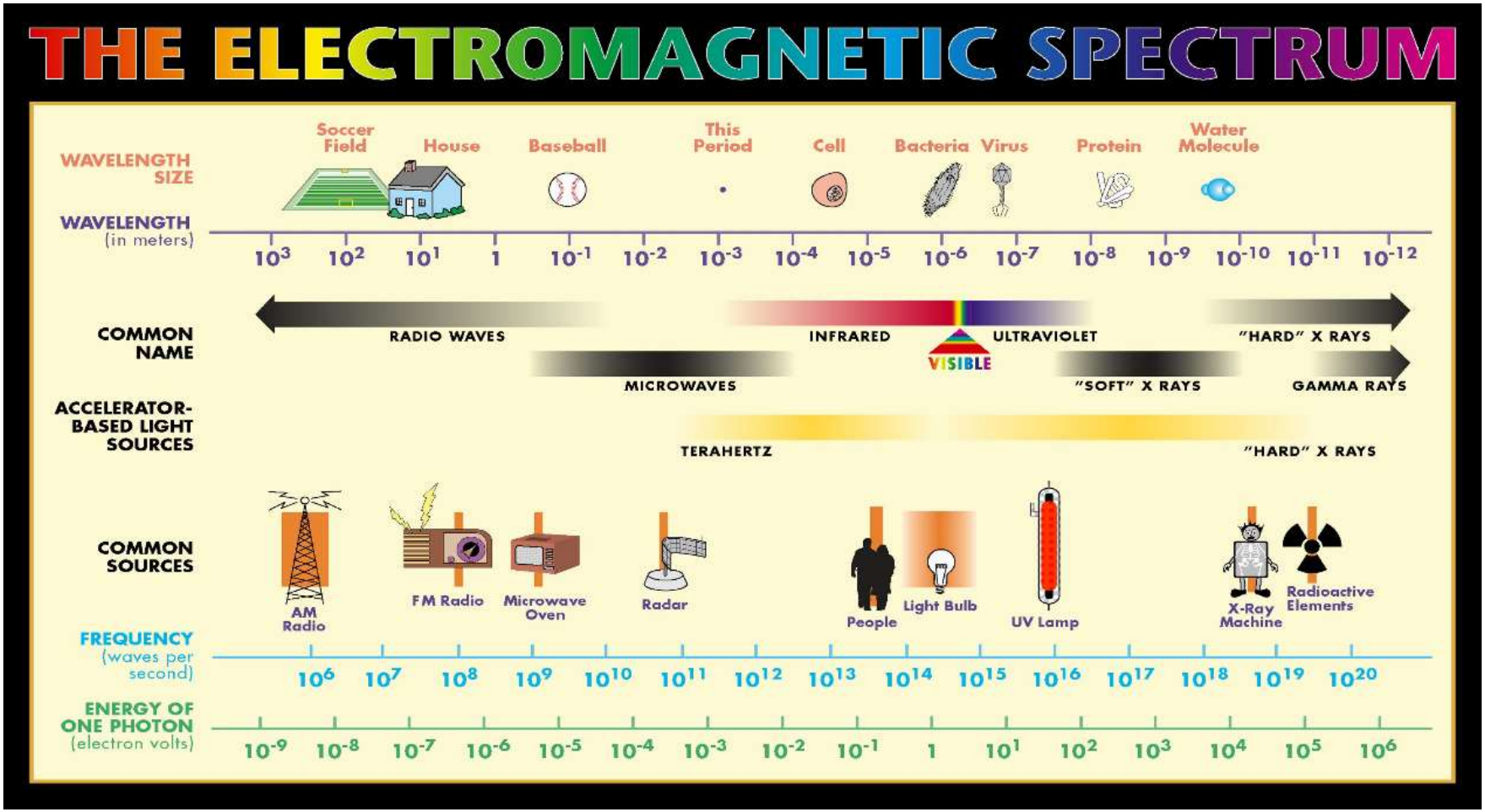
Ionizing Radioctivity

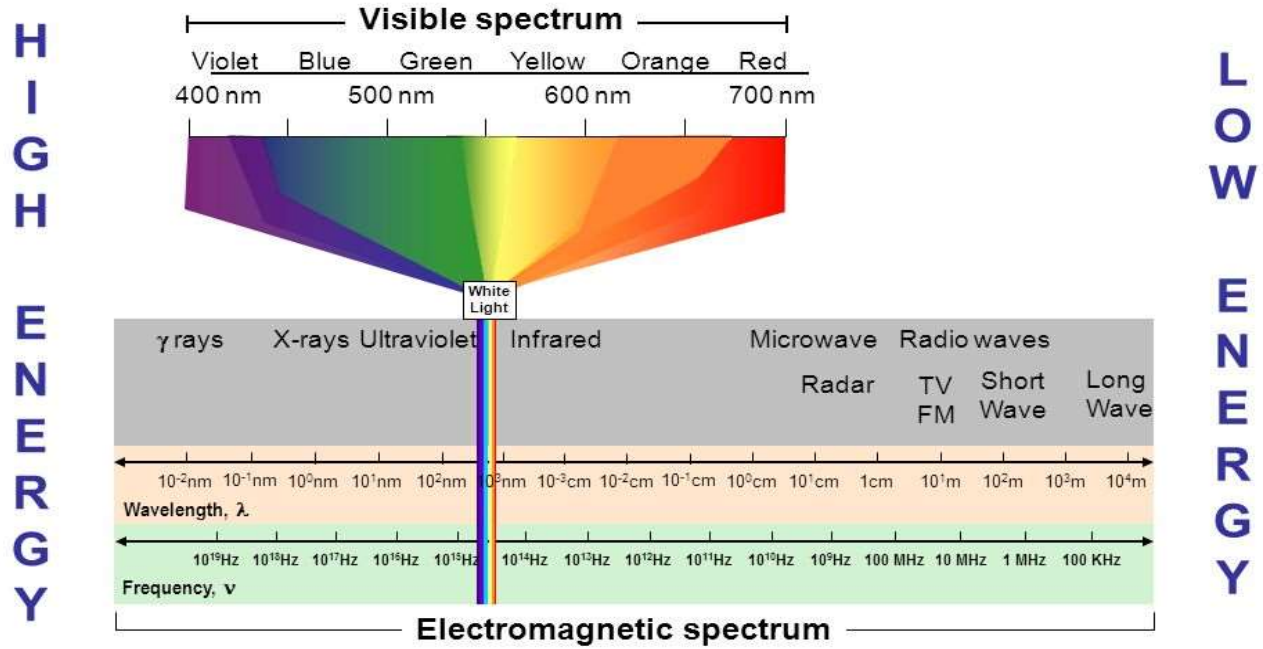
Ionizing Radioctivity

Gamma rays, X-rays, and the higher ultraviolet (λ < 100 nm) part of the electromagnetic spectrum are ionizing , whereas the lower ultraviolet part of the electromagnetic spectrum and all the spectrum below UV, including visible light (including nearly all types of laser light), infrared, microwaves, and radio waves are considered non-ionizing radiation.

Ionizing radiation is not detectable by human senses, so radiation detection instruments such as Geiger counters must be used to indicate its presence and measure it.

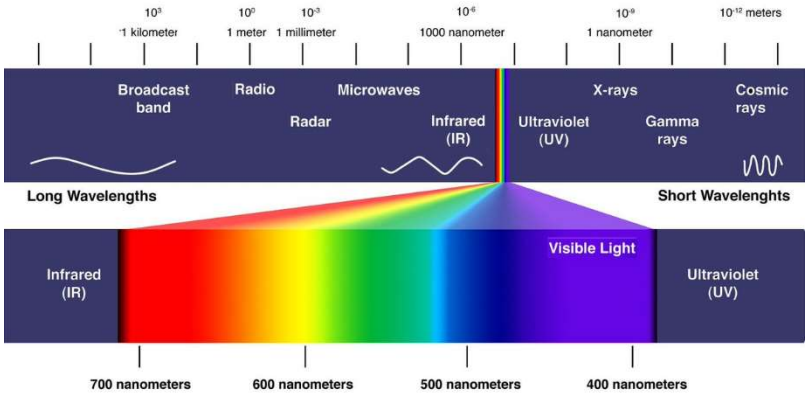

THE ELECTROMAGNETIC SPECTRUM
WAVELENGTH SIZE
Soccer Field
House
Baseball
This Period
Cell
Bacteria
Virus
Protein
Water Molecule
WAVELENGTH (in meters)
10^3 10^2 10^1 1 10^-1 10^-2 10^-3 10^-4 10^-5 10^-6 10^-7 10^-8 10^-9 10^-10 10^-11 10^-12
COMMON NAME
RADIO WAVES
INFRARED
ULTRAVIOLET
"HARD" X RAYS
VISIBLE
MICROWAVES
"SOFT" X RAYS
GAMMA RAYS
ACCELERATOR-BASED LIGHT SOURCES
TERAHERTZ
"HARD" X RAYS
COMMON SOURCES
AM Radio
FM Radio
Microwave Oven
Radar
People
Light Bulb
UV Lamp
X-Ray Machine
Radioactive Elements
FREQUENCY (waves per second)
10^6 10^7 10^8 10^9 10^10 10^11 10^12 10^13 10^14 10^15 10^16 10^17 10^18 10^19 10^20
ENERGY OF ONE PHOTON (electron volts)
10^-9 10^-8 10^-7 10^-6 10^-5 10^-4 10^-3 10^-2 10^-1 1 10^1 10^2 10^3 10^4 10^5 10^6

Electromagnetic Spectrum



http://www.youtube.com/watch?v=bjOGNVH3D4Y

Davis, Frey, Sarquis, Sarquis, Modern Chemistry 2006, page 98



First aid Measures

EYE Contact:

- Check for and remove any contact lenses. Immediately flush eyes with plenty of water for 15 mins. Get medical attention immediately.

Skin Contact

- Immediately flush skin with plenty of water for at least 15 mins while removing contaminated clothing and shoes.
- Cover the irritated skin with emollient .
- Get medical attention immediately.

First aid Measures

EYE Contact:

- Check for and remove any contact lenses. Immediately flush eyes with plenty of water for 15 mins. Get medical attention immediately.

Skin Contact

- Immediately flush skin with plenty of water for at least 15 mins while removing contaminated clothing and shoes.
- Cover the irritated skin with emollient .
- Get medical attention immediately.

Ingestion

- If swallowed ,don't induce vomiting unless directed by the medical professional.
- Never give anything by mouth to an unconscious person.
- Loosen tight clothing such as collar, tie belt or waistband.
- Get medical attention immediately.

Vikash Mishra, Ph.D Scholar

https://www.slideshare.net/VikashMishra53/material-safety-data-sheetor-safety-data-sheet

Ergonomic

Ergonomic hazards are present in work environments from offices to construction sites; this includes injuries or strains from repetitive strains, strains from lifting/pushing/pulling, standing, shiftwork or slips and falls. Ways to manage ergonomic hazards include making sure that workers have the right equipment and tools to do their jobs comfortably, designing the workplace to be more ergonomic, and empowering workers to perform exercises or stretches to prevent musculoskeletal disorders.

Physical

Physical hazards are substances or activities that threaten your physical safety such as conditions that can cause injury, illness and death. The most common physical hazards are temperature, air quality, mould, noise or radiation. These hazards are particularly relevant for workers who work in industrial environments, such as in oil and gas, mining, construction and more.

In these environments, companies, supervisors and workers need to work closely together to manage the risks. Companies must ensure the right equipment, monitoring and training is provided, and workers have to proactively communicate with each other.

Psychosocial

Psychosocial hazards are stress, violence or bullying in the workplace environment. This can involve how workers interact with other workers and/or emotional responses workers have that negatively impact a worker's productivity or effectiveness. Companies should have resources or a department that workers can contact if they are experiencing stress, harassment or other concerns. Supervisors and managers should have regular meetings with workers on a one-on-one basis where workers can voice their concerns.

Workplace

Workplace hazards include confined spaces or ventilation, temperature, or heights and particularly apply to work environments in oil and gas, mining, construction or other industrial environments. Environments with persistent safety hazards should require detailed safety planning and may even require emergency response teams to be on standby. Workers in workplaces with an abundant amount of hazards should get regular safety training, have strict safety procedures and regular training drills.

No workplace is completely hazard-free, and industrial environments are particularly risky. However, it’s in the best interest of the employer, supervisors and workers to keep everyone safe and healthy.