

# RADIATIONACTIVE POLLUTION

A black and white photograph of a nuclear explosion's mushroom cloud. The cloud has a thick, dark stem rising from a base of white smoke and debris. At the top, it expands into a large, billowing, white and grey cloud that resembles a mushroom. The background shows a dark, overcast sky and a landscape with scattered white clouds or smoke.

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# Radioactive pollution

Radioactive pollution is a type of radiation pollution caused by radionuclides as they emit hazardous radioactive rays such as alpha rays, beta rays and gamma rays which are ionizing radiations capable of causing Genetic mutations in living organisms.



# Sources of radioactive pollution

1. radiotherapy- radionuclides used in radio therapy of diseases like cancer
2. nuclear tests and Radioactive fallout
3. nuclear reactors- leakage of nuclear radiation from nuclear reactors
4. nuclear power plants- Chernobyl power plant leakage
5. radioactive waste- storage transport and disposal causes radiation pollution deep under earth surface or in the deepest portion of the oceans.
6. radioactive ore processing- radionuclides from mines pollute soil water and air.
7. Industrial and Medical Research.

# Hazards of Radioactive pollution.

1. Higher doses of radiation may lead to nausea, vomiting, diarrhoea, loss of appetite etc.
2. Long term exposure over small quantities of radiation would cause cancer.
3. Short term exposure of large quantities of radiation cause breast cancer thyroid lung or brain cancer.
4. Radiations breakdown and enzymes, proteins, nucleic acids etc. causing metabolic disorders.
5. Radiations cause internal bleeding and blood vessel damage which appearance red spots in the skin
6. Radiations damage eye cells and induce cataract.
7. Causes bone marrow depression, kidney and liver disorders, damage reproductive organs and gastro-intestinal disorders.
8. Radiation lead to genetic mutations and chromosome abnormalities which are transmitted to next generation
9. Exposure to radiation kills plant cells and thereby destroys vegetation.
10. Water pollution by Radioactive materials destroys aquatic population.

# Control of radioactive pollution

1. Use of high chimneys and high ventilators
2. While working with the radionuclides hoods, gloves and masks made of protective materials should be used
3. Production of radioisotopes should be minimised
4. Care should be taken during the disposal of radioactive waste materials..
5. Leakage of radiations from nuclear reactors in power plants should be prevented by following all safety precautions.
6. The number of nuclear installations should be minimised
7. Nuclear explosion tests and production of nuclear weapons should be stopped completely otherwise entire human race will be wiped out from the surface of Earth.

# HIROSHIMA INCIDENT

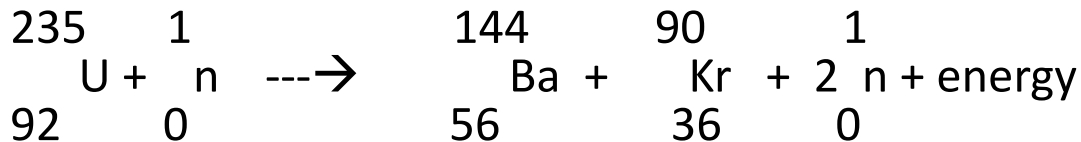
## Dropping the atom bomb -Little Boy

Nuclear fission of U-235

Sudden release of energy.

Aug -6 ,1945. in the city of of Hiroshima. During world war II.Little boy by America.

Worlds first atom bomb.



Killed around 80000 people immediately. Injured approx.70000.

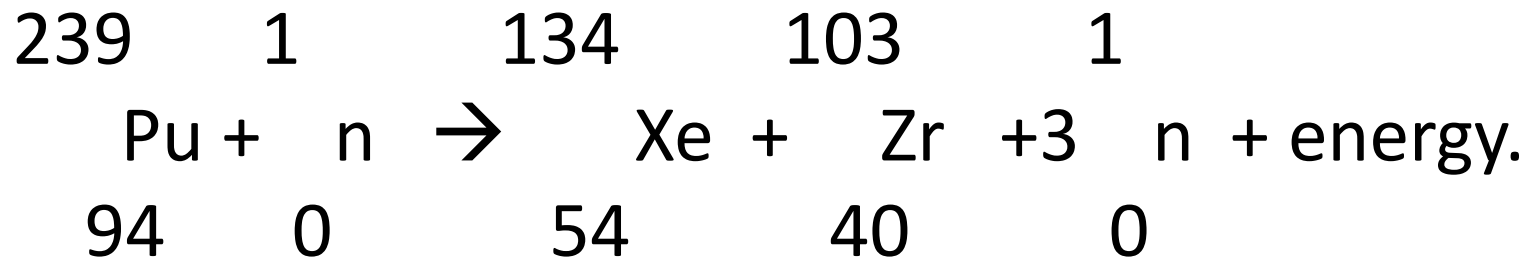
Several thousand suffered over next several years from the effects of radiation pollution.

# Nagasaki incident

## dropping of bomb- Fat man

August 9, on 1945.- Fat Man by America.

Nuclear fission of Plutonium-239.



Powerful than Hiroshima bomb but the topography of nagasakki reduced the extend of disaster.

40000 was killed , many injured and the effect of disaster stayed for several years.

# Chernobyl accident

April 26, 1986.

Chernobyl nuclear power plant in Ukraine.

Plant blew off the 1000 metric tonnes of concrete roof and caught fire.

2 died on the spot, 28 within few weeks .

Most of the flora and fauna were either killed mutated or irradiated.

135000 were evacuated withindays and 150000 by 1991.

Many died latter.237 people who were involved in clean up process got acute radiation syndrome and later died.

70000 suffered severe poisoning.

Increased thyroid cancer,leukemia, genetic anomalies reported.

40000 children were reported to have lung cancer.

Even today many suffer from illnesses.

In 2000 last working reactors were shut down and the plant was officially closed.