

## Chemical pollution

Chemical pollution is defined as the presence or increase in our environment of chemical pollutants that are not naturally present there or are found in amounts higher than their natural background values. Most of the chemicals that pollute the environment are man-made, resulted from the various activities in which toxic chemicals are used for various purposes.



Sources of pollution is divided into two types: natural pollution and industrial pollution.

1. Natural pollution : pollution is the source whose source is due to natural phenomena that occur from time to time, such as volcanoes, thunderbolts, and storms that may carry huge amounts of sand and dust, and damage crops, so natural pollution is therefore sources of natural origin, and there is no income for man in it.
2. Industrial pollution: -Industrial pollution results from human action and activity, and finds its source in man's industrial, service, and entertainment activities, etc., and in his increasing uses of modern technology manifestations and its various innovations. It responsible for the emergence of the pollution problem in our

time, and reaching this degree The serious threat to life and the survival of man on the surface of the earth, and among the most important sources of industrial pollution: industrial and commercial waste and what is emitted by car exhaust, and factory chimneys that leave toxic (chlorine, fluorine and carbon) compounds, and others.



**Chemical substances effects of human healthy**

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**MAIN TYPES OF CHEMICAL POLLUTION:** These chemicals can react with tissues in the body and change the structure and function of the organ, cause abnormal growth and development of the individual, or bind with the genetic material of cells and cause cancer. One of the central tenets of the study of such effects (toxicology) is that the dose of a chemical determines its overall effects and that most chemicals can be dangerous at high exposure

1. **Inorganic pollutants:** Inorganic pollutants are released into the environment due to activities of mining, industry, transportation and urban activities. Environmental risks associated with inorganic pollutants vary widely due to several complex interactions at both intracellular and extracellular levels. Toxic heavy metals and metalloids interact quite strongly with soil constituents as compared to salts of alkali metals, rate of which however, depend on the element and their speciation.

2. **Organic pollutants:** More of organic compounds used in industry and medical field there are we exposure in daily life, They're used for drugs and cleaning applications and as solvents in a wide range of products such as fuels, paints, inks, preservatives and pesticides , therefore causes more pollutions, So can have serious impacts of human health. and many can be absorbed through intact skin and absorbed into the bloodstream; and may be have more major route of entry into the body.

3. **Nuclear (Radiation) pollutants:**

Radiation warning symbol  
(nuclear power plants)



Radiation pollution means the leakage of radioactive materials into one of the components of the environment, such as water, air, and soil. It is considered one of the most dangerous types of environmental pollution in our time, as it is not seen, smelled, does not feel. Without any resistance, and without any indication of its presence, and without first having an effect, and when radioactive materials reach the cells of the body, they cause visible and hidden damage that often leads to human life, and

radioactive contamination may occur from natural sources such as radiation from outer space and gases Radioactive mounting from the cortex Z, or from industrial sources of nuclear power stations of atomic reactors and radioactive isotopes used in industry, agriculture, medicine or other.

Radioactivity is toxic because it forms ions when it reacts with biological molecules. These ions can form free radicals, which damage proteins, membranes, and nucleic acids. Radioactivity can damage DNA (deoxyribonucleic acid) by destroying individual bases (particularly thymine), by breaking single strands, by breaking double strands, by cross-linking different DNA strands, and by cross-linking DNA and proteins. Damage to DNA can lead to cancers, birth defects, and even death.

4. **Biological pollutants:** Biological or biological pollution is considered one of the oldest forms of pollution known to man, and this pollution arises as a result of the presence of visible or invisible living organisms such as bacteria, fungi and others in the environmental medium such as water, air or soil, so the mixing of disease-causing organisms with food that The person eats it, the water he drinks, or the air that he inhales causes biological pollution, which leads to disease.