Primary Pollutants: These persist in their original form in Environment.

Secondary Pollutants: These are formed from interaction among primary pollutants
Ex: PAN (Peroxyacetyl Nitrate).

Quantitative Pollutants: They are naturally occuring substance, become pollutant when their concentration goes beyond their natural level, i.e CO_2.

Qualitative Pollutants: These do not occurs in nature & man made ones.

1) Biodegradable.
2) Non-Biodegradable.

Air Pollution

CO- colourless odourless gas - produced by incomplete burning of carbon based fuels including Petrol diesel & wood - Cigarettes etc.
- It lowers the amount of oxygen that enters into blood, slow reflexes.

CO_2- Principal Greenhouse emitting gas.

CFC- ozone layer reduces due to this.

Lead: Petrol, diesel, Hair sprays, lead batteries affects children in particular. Causes nervous system damage & digestive problems. Cancer etc.

Ozone: At ground level it is pollutant with high toxicity. vehicles & factories are major contributor. Lowers resistance to cold & Pneumonia, itching in eyes & burning of skin.

NO_x: (Nitrogen Oxides) - Causes Smog and acid rain. Causes respiratory disease in children.

Suspended particulate Matter (SPM)

Smoke, dust, vapour main source of haze. causes lung damage & respiratory problem.

SO_2 (sulphur dioxide) smog and Acid rain. lead to lung diseases produced from burning of coal in thermal power plants.

Smog or Photochemical smog (SMOG-FOG+SMOKE)

- Photochemical Smog: Sunlight + certain Chemicals - (Ozone).
Ground level Ozone is formed when vehicular emission containing nitrous oxides (vehicle exhaust) and volatile organic compounds (paints etc.) interacts in the presence of Sunlight.

Indoor Air Pollutions

- Carbon monoxide, polycyclic organic matter, Formaldehyde, Formaldehyde - mainly from Carpets, particle boards, insulation foams.
- Radon: It is gas naturally emitted by soil. Causes lung cancer.

Fly Ash: Composition - Aluminium Silicate, Silicon dioxide (SiO_2) and Calcium oxide - CaO. Causes respiratory problems.

Mercury: Nervous disorder, insomnia, Memory loss, irritability irritation, tremor, gingivitis & Minamata

Lead: Brain damage & CNS.

Cadmium: Affects the heart

Silica dust: Silicon quartz — silicosis - affects lungs.

Cotton dust: Byssinosis — involves distruction of lung tissue, cough etc.

Asbestos - Asbestosis — severe respiratory problem & cancer.

Coal dust: Black-lung cancer / pulmonary fibrosis.

- Arresters & Scrubbers are used to remove particulate pollutants from air. Arresters are used to separate particulate matter from contaminated air, Scrubbers — These are used to clean air for both dusts & gases by passing it through a dry or wet packing material.

Catalytic Converter fitted in the vehicles can convert nitrogen oxide to nitrogen and reduces the potential Hazard of NOx.

- National Ambient Air Quality Standards (NAAQS) were notified in the year - 1982 revised in 1994.

NAAQS have been revisited and revised in November - 2009 for 12 Pollutants - SO_2, NO_2, PM10 (2.5 to 10) PM2.5 (Particulate matter less than 2.5 micrometer) Ozone, lead, Carbon Monoxide, Arsenic, Nickel, Benzene, Ammonia Benzo pyrene.