Factsheet 31:
Environmental Protection

Preston City Council

Know Your Pollutants

Nitrogen Oxides

Nitrogen Dioxide (NO2) and nitric oxide (NO) are both oxides of nitrogen and together they are referred to as NOx. All combustion processes in air produce NOx, though the colourless gas NO usually predominates. NO converts to the red/brown gas NO2 in the atmosphere via reaction with chemically active species such as ozone.

Nitrogen dioxide can exacerbate symptoms associated with respiratory illness. Exposure to nitrogen dioxide may put children at increased risk of respiratory infection and may lead to poorer lung function in later life.

Sulphur Dioxide

In the United Kingdom the predominant source of sulphur dioxide (SO2) is from the combustion of sulphur containing fossil fuels. It dissolves in water to give an acidic solution that corrodes metals and stonework.

Sulphur Dioxide is an irritant when inhaled, because of its acidic nature, and high concentrations may cause breathing difficulties in people exposed to it. People suffering from asthma may be especially susceptible to its adverse effects. Sulphur Dioxide can also lead to direct adverse effects in vegetation.

Carbon Monoxide

Carbon Monoxide, (CO) is a gas formed by the incomplete combustion of carbon containing fuels. It is a colourless and odourless gas. At very high levels, prolonged exposure can result in death. At lower levels, the reduction in the oxygen carrying capacity of the blood may increase the risk of heart problems in predisposed individuals.

Ozone

Ozone (O3) is not emitted directly from any man made source in any significant quantities, but arises from chemical reactions in the atmosphere caused by sunlight. These reactions are complicated and result from oxides of nitrogen and hydrocarbons or volatile organic compounds reacting with each other.

The short term health effects include pulmonary function changes, increase airway responsiveness to broncho constrictors, and airway inflammation. Sensitivity of subjects to inhaled allergies such as pollen may be increased.

Environmental Health

Particulates

Particulates in the atmosphere arise from a wide range of materials and sources. Man-made ones include carbon particles from incomplete combustion, ash, those formed by chemical reactions and mining, quarrying and construction operations. Natural sources include wind blown dust, sea salt and biological particles such as pollens and fungal spores.

Preston City Council

Environmental Health