

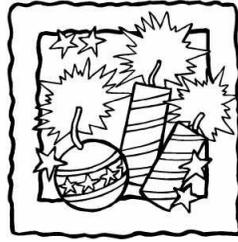


# PUNJAB POLLUTION CONTROL BOARD

TOWARDS SAFE & POLLUTION FREE DIWALI  
AVOID BURSTING OF FIRE CRACKERS



**S. Parkash Singh Badal**  
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SAY NO TO CRACKERS



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## Effects of Pollutants on Environment and Health

### Suspended Particulate Matter (SPM):

- ✓ The increase in level of suspended particles in the air causes eye, throat and nose problems.
- ✓ Chronic Pulmonary Disease (bronchitis, asthma) gets aggravated by sufficient high concentration of SPM.
- ✓ The particulate matter may contain some heavy metal oxides/salts, which get deposited in the lungs causing irreversible damage.
- ✓ Suspended particulate matter (SPM) exposure to the level of 100-ppm results in headache and reduced mental acuity.
- ✓ The high concentration of SPM in ambient air impairs visibility. The effects are more pronounced in people with heart, lung or central nervous system diseases.

### Sulphur Dioxide (SO<sub>2</sub>):

- ✓ Sulphur dioxide is readily soluble and dissolves in the larger airways of the respiratory system. This stimulates a contraction. At higher concentration severe contracts restricts the breathing process.
- ✓ Allergy problems are also caused to skin.
- ✓ Sulphur Dioxide in the presence of moisture react with building material resulting in physical and chemical changes i.e. corrosion of iron, steel, aluminum alloys, copper alloys metallic structures.
- ✓ The oxides of sulphur react with lime stone building material to form calcium sulphate.

### Oxide of Nitrogen (NO<sub>x</sub>):

- ✓ Nitrogen dioxide is less soluble and so penetrates to the smaller airways and into the lungs. They destroy the linings of the respiratory surface, thereby reducing the intake of oxygen for the body. These cause respiratory allergies like asthma especially to the susceptible population.
- ✓ Causes throat and chest congestion, and are likely to aggravate problems for those already suffering from coughs, colds and allergies.

### Carbon Monoxide (CO):

- ✓ CO causes harm by binding with haemoglobin in our blood forming carboxy haemoglobin (CO-Hb). CO attaches with hemoglobin roughly 220 times more strongly than the oxygen so that amount of CO in the air we breathe can cause significant amount of our haemoglobin to be tied up as CO-Hb. The haemoglobin thus tied up cannot serve its normal function, to transport oxygen in the blood. Thus as the blood, ability to transport oxygen declines, various parts of the body suffer oxygen deprivation. 70% or more percent carboxy haemoglobin is normally fatal.

### Carbon Dioxide (CO<sub>2</sub>)

- ✓ CO<sub>2</sub> is the major source of organic carbons in the biosphere. There has been steady increase in CO<sub>2</sub> concentration in the atmosphere is about 350 ppm. At this concentration, it has no harmful effects to human, but increased emissions of CO<sub>2</sub> are the largest single cause of global warming.

### Noise:

- ✓ High decibel level results in restlessness, anger, fidgetiness, impulsive behavior and over reaction to situations. Most crackers used have more than 80 dB noises that can cause temporary hearing loss.
- ✓ Noise pollution can leads to hearing loss, high blood pressure, heart attack and sleep disturbances.
- ✓ Children, pregnant women and those suffering from respiratory problems suffer the most due to excessive noise. It results in making them hyperactive or withdrawn.

**SAY NO TO CRACKERS & SPARKLERS**

**CHAIRMAN**