AIR POLLUTION FROM FERTILIZER INDUSTRIES

Question 1-how would the fertilizer industries causes air pollution (4m)

Answer –

Air pollution takes place due to manufacturing of fertilizer in fertilizer industry. This source of air pollution spews particulates, matter and chemical into the atmosphere. The exhaust from fertilizer industry includes carbon monoxide and dioxide, sulphur oxides, nitrogen oxide, as well as volatile organic compound and particulates. This gases added into atmospheric air. Due to this air is polluted and this polluting air effect on the human health. Due to this reason fertilizer industries causes air pollution.

Question 2- What are the effects of air pollutants from fertilizer industry on human health? (8m)

Answer -

Fertilizer industry produces carbon oxide, nitrogen, sulphur particulates matter and fluorine.

1) Carbon oxide-

Affect the respiratory activity as hemoglobin has more affinity for CO than for oxygen. Thus C combines with HB and thus reduces the oxygen carrying capacity of blood. This result in blurred vision, headache, unconsciousness’ and death due to the asphyxiation. (lack of oxygen)

2) Global warming as it is one of the greenhouse effect due to the gasses.

3) Sulphur dioxide-

Respiratory problems, severe headache, reduce productivity of plants, yellowing and reducing storage time for paper, yellowing damage to lime stone and marbal, damages to leather, increased rateof corrosion, steel, zinc and alluminium.
4) **Nitrogen oxide** –
   Forms photochemical smog, higher concentration causes leaf damage or affect phoyosynthetic activity of plant and causes respiratory problems in mammals.

5) **Particulates matter** –
   Toxic effect on man.

**Question 3)** Which are the Control devices of air pollution used in fertilizer industry?  (8m)

**Answer**-  
Following devices are commonly used as pollution control devices in fertilizer industry and transportation devices. They can either destroy contaminates or remove them from an exhaust stream before it is emitted into the atmosphere.

1) **Particulates control** -
   Mechanical control (dust cyclone, multicyclone)
   Electrostatic precipitators
   Particulates scrubber

**Scrubber** –
   A) Baffle spray scrubber  
   B) Cyclonic spray scrubber  
   C) Ejector venture scrubber  
   D) Spray tower  
   E) Wet scrubber
2) NOx control -
   A) Low NOx burner
   B) Selective catalytic reduction (SCR)
   C) NOx scrubber
   D) Exhaust gas recirculation

3) VOC abatement –
   A) Flars
   B) Thermal oxidizer
   C) biofilter
   D) absorption (scrubbing)
   E) catalytic converter

4) acid gas / SO2 control –
   A) wet scrubber
   B) dry scrubber
   C) flue gas desulfurization
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