POLLUTION CONTROL AND SAFETY

The first accounts of the poisonous action of 'methylated spirits' were published in 1855. However the number of cases of poisoning increased only after production of low – order methanol. Methanol vapour is taken up in an amount of 70 – 80% by lungs. The compound is distributed throughout body fluids and is largely oxidized to formaldehyde and then to formic acid. This leads to hyperacidity of blood which is ultimately responsible for methanol poisoning.

Methanol has a slight irritant action on the eyes, skin and mucous membranes in humans. Chronic methanol poisoning is characterized by damage to visual and central nervous systems.

The treatment of acute oral methanol poisoning should be initiated as quickly as possible with following measures.

1. Administration of ethanol – because ethanol has a greater affinity for alcohol dehydrogenase than methanol, oxidation of methanol is inhibited; production of formaldehyde and formic acid is suppressed.
2. Gastric lavage
3. Hemodialysis
4. Treatment with alkali
5. Administration of CNS stimulants
6. Drinking larger volumes of fluid
7. Eye bandage; eyes should be protected against light
8. Patient should be kept warm

Occupational Health:

No special precautions need be taken when handling methanol since it is not corrosive, caustic or environmentally harmful. However, absorption through skin constitutes danger, and methanol should be prevented from coming in direct contact with skin.

Appropriate workplace hygiene measures should be adopted if methanol is handled constantly. Rooms in which methanol is stored or handled must be ventilated adequately. Gas testing tubes can be used to measure the concentration in air. Respirators must be worn if substantially high concentrations are present. Filter masks can be used only for escape or life saving purposes because they are exhausted very quickly. Respirators with a self contained air supply and heavy duty chemical protective clothing should be used for longer exposures to high methanol concentrations.