

LD<sub>50</sub> values for a given toxic material vary considerably, depending on a number of factors, some of which are:-

Concentration of the dosage;

Rate of administration;

Route of application;

Animal (species

(age

(sex

(genetic strain

Time of determination of death

Estimates of lethality for man are usually based on LD<sub>50</sub>

figures from more than one species of mammals extrapolated to a body weight of 70 Kg. When results with different species are in wide disagreement, results obtained with primate species are given disproportionate weight in making the human estimate.

#### MEASUREMENT OF LETHALITY OF INHALED TOXIC MATERIALS

When the toxic material is a vapour or aerosol which is inhaled into the lungs, practical difficulties arise in determining the amount of toxic material actually inhaled by each individual animal exposed. This determination would be required in order to calculate the LD<sub>50</sub> in mg. toxic material inhaled per Kilogram of body weight.

These difficulties are normally avoided by using the LC<sub>50</sub> as the measure of toxicity. The concentration of the toxic material in the air (in mgm. per cubic metre) is multiplied by the time of exposure (in minutes). The resulting product or Ct, is a measure of the dosage breathed by each animal which allows for variations in size. The amount of air an animal breathes per minute is approximated proportional to body weight; and therefore Ct values are proportional to inhaled dosage per Kilogram.