

$$LD_{50} \text{ (inhaled)} = LCT_{50} \times \frac{\text{liters of air inhaled per minute}}{\text{Kilograms body weight}}$$

Either LD_{50} (inhaled) or LCT_{50} can be used as indices of vapour toxicity, however, the LCT_{50} has obvious practical and theoretical advantages over the LD_{50} (inhaled) for comparison of lethality of inhaled materials.

MEASUREMENT OF LETHALITY OF TOXIC MATERIAL ABSORBED THROUGH THE SKIN

For toxic materials (usually liquids of low volatility) which cause death when absorbed through the skin, the LD_{50} (percutaneous) may be estimated by applying measured amounts of liquid droplets to the bare shaved skin of suitable animals, while at the same time preventing the inhalation of vapours. For extremely toxic materials, difficulties in measuring and applying the very small amounts of liquid may be encountered; in these cases, the toxic material may be suitably diluted in a non-toxic volatile solvent. The calculation of the LD_{50} is the same as that previously described, and is expressed proportionally to the body weight, i.e. mg. per Kgm.

POSSIBLE APPROACHES TO STANDARDS OF LETHALITY FOR TREATY PURPOSES

A standard of lethality which would be suitable for international agreement should as far as possible define materials which would be attractive as chemical weapons, but exclude a number of materials in common use which, although lethal at low doses, are unattractive as weapons and have important economic and utilitarian values (or the use of the latter materials as CW agents could be banned, but their manufacture for civil purposes might be permitted).