

solubility. Rather, the LD_{50} is one of many indices used in defining acute toxicity (Chan and Hayes, 1989).

2.2.2 LD_{50} and Its Determination

Definition

The LD_{50} , in its simplest form, is the dose of a compound that would cause 50% mortality in a population of test animals under specified laboratory conditions. The OECD (1983) has defined the LD_{50} as the "statistically derived single dose of a substance that can be expected to cause death in 50% of the animals." Therefore, the LD_{50} value is simply a descriptive term designed to describe statistically the lethal response to a chemical in a particular population under a discrete set of experimental conditions (Chan and Hayes, 1989).

Origin and Significance of the LD_{50}

Many years ago, the use of plants or extracts of plant or animal tissues in medicine created a need to compare the therapeutic potency of different lots of materials (SOT, 1989). This led to the development of bioassay procedures which estimated the ED_{50} (effective dose/50% response or median effective dose) of similar materials so that comparisons could be made. If the effect measured was death, the ED_{50} became the LD_{50} (median lethal dose). Thus, the LD_{50} is one variant of