

1.4.3.1 Toxicological methods:

(a) Definitions

LD₅₀ (Lethal Dosis, 50%) scientifically defined as the dosis of a substance, which is expected to kill 50% of an exposed population. It is expressed as mg/kg body weight.

LCT₅₀ (Lethal Concentration and Time, 50%) scientifically defined as the product of time for exposure and concentration of a substance in air, which is expected to kill 50% of an exposed population. It is expressed as mg min/m³.

ED₅₀ (Effective Dosis, 50%) scientifically defined as the dosis of a substance, which is expected to incapacitate 50% of an exposed population. It is expressed as mg/kg body weight.

ECT₅₀ (Effective Concentration and Time, 50%) scientifically defined as the product of time for exposure and concentration of a substance in air, which is expected to incapacitate 50% of an exposed population. It is expressed as mg min/m³.

The expression "expected to incapacitate 50% of an exposed population" could be understood as "expected to disable 50% of the exposed soldiers to perform their usual duties in a war situation".

(b) Methods

General considerations. Toxicity tests could be in accordance with "Principles and Methods for Evaluating the Toxicity of Chemicals", Environmental Health Criteria 6, World Health Organization, Geneva 1978.

Toxicity tests may have to be preceded by chemical analysis, as described below. As far as possible, toxicity tests may have to be performed on pure substance. When determining lethal effects of a substance (LD₅₀ and LCT₅₀) two species may have to be used - mice and rats of well-defined, easily available strains. Lowest value may be decisive.

For LD₅₀-determinations, subcutaneous injection could be the way of administration. Survival during 48 hours could be observed. Calculation of LD₅₀ may have to be done according to established procedure.

For LCT₅₀-determinations, the time of exposure is maximised to ten minutes. When aerosols are used, particle size distribution may have to be determined and optimized in order to ascertain maximal uptake. Survival during 48 hours may have to be observed. Calculation of LCT₅₀ may have to be done according to established procedure.