

TABLE 42-B THRESHOLD LIMIT VALUES FOR 1968 (Concluded)

Pentaerythritol
Plaster of Paris
Rouge
Silicon Carbide
Starch
Sucrose
Tin Oxide
Titanium Dioxide
Vegetable oil mists
(except castor,
cashew nut, or
similar irritant
oils)

*When toxic impurities are not present

Appendix E

Some Simple Asphyxiants—'Inert' Cases
and Vapors

Acetylene	Hydrogen
Argon	Methane
Ethane	Neon
Ethylene	Nitrogen
Helium	Nitrous Oxide
	Propane

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brief excursion of concentration beyond the acceptable ceiling. There are many substances where such excursions would be quite acceptable, if the remaining exposure is otherwise limited to the acceptable ceiling and acceptable time-weighted average. The Z37 Standards also include any other level or levels considered by experts to be pertinent to a particular substance under consideration.

Many individuals refer to a published TLV or AC as a "go" or "no go" value—something to be used in a specific situation—and overlook the important qualifications of these values set forth by the organizations establishing them. The preface to the annual list of TLV's and the introduction to each of the ASI Z37 series of AC's provide a basic explanation of the concepts on which these values are based. To use the values intelligently, their definitions should be understood before they are applied to a specific situation. Knowledge of the type of injury which would result from dangerous overexposure is also needed.

As mentioned previously, toxic effects may be broken down into four major classifications:

- 1 Acute toxicity,
- 2 Chronic toxicity,
- 3 Narcosis, and
- 4 Discomfort

The time-weighted average concentration

would be the appropriate guide where chronic toxic effects result from overexposure. When protection against narcosis is required, the concentration should never exceed some ceiling value. To minimize discomfort, the instantaneous excursions or peak concentrations are of interest.

Both the ASI and ACGIH, in defining their respective values, point out that an understanding of the criteria on which the values are established is necessary in deciding how to use the values.

It should be remembered that TLV's and AC's are, even though applied as intended, relative values. The concentration that just approaches the threshold limit is just as hazardous or safe as the one that slightly exceeds it, and conversely. There is no fine line that can be drawn to provide complete safety for all individuals.

In general, it is desirable to limit air contamination to the lowest possible level—consistent with efficient plant operations.

Probably the greatest misuse of both the TLV's and the AC's is the practice of comparing toxic substances by a ratio of their respective AC or TLV. It should also be remembered that neither the TLV nor AC should be considered the sole criterion of suspected occupational disease. The ASI and ACGIH specifically state that their values are intended to serve as guides for good engineering practice and are not intended to be