

TABLE 38-E THRESHOLD LIMIT VALUES FOR CHEMICAL SUBSTANCES IN WORKROOM AIR, 1973 (Continued)

NOTICE OF INTENDED CHANGES
(Cont'd)

Environmental conditions have not been sufficiently defined to assign a TLV (1b)

1a *Human Carcinogens*—Substances recognized as occupational carcinogens with an assigned TLV

Asbestos, all forms, 5 fibers/cc > 5µm in length

bis (Chloromethyl) ether, 1 ppb

Chromates, certain insoluble forms, 100µg/m³

Coal tar pitch volatiles 200µg/m³

Nickel carbonyl, 1 ppb

1b *Human Carcinogens* — Substances known to be potent occupational carcinogens without an assigned TLV.

4-Aminodiphenyl (p-Xenylamine)

Benzidine and its salts

beta-Naphthylamine

4-Nitrodiphenyl

For the substances in 1b, no exposure or contact by any route, respiratory, skin or oral, as detected by the most sensitive methods, shall be permitted. "No exposure or contact" means hermitizing the process or operation by the best practicable engineering methods, and protecting the worker by proper equipment that will insure virtually no contact or entry of the carcinogen by any route

2 *Experimental Carcinogens*—Industrial substances found to be of high potency

in inducing tumors under experimental conditions in animals

Beryllium

Chloromethyl methyl ether

3, 3'-Dichlorobenzidine

Dimethyl sulfate

Ethylenimine

4, 4'-Methylene bis (2-chloroaniline)

N-Nitrosodimethylamine

beta-Propiolactone

For the above compounds, worker exposure by all routes should be reduced to a minimum in light of the warning of the potency of these substances to induce tumors in animals. "Reduced to a minimum" means extraordinary care shall be taken both in manufacture and in handling so that worker exposure by all routes is kept below the limit of sensitivity of the analytic method of determining the exposure concentration

Appendix B

B¹ *Polytetrafluoroethylene* decomposition products*. Thermal decomposition of the fluorocarbon chain in air leads to the formation of oxidized products containing carbon, fluorine and oxygen. Because these products decompose in part by hydrolysis in alkaline solution, they can be quantitatively determined in air as fluoride to provide an index of exposure. No TLV is recommended pending determina-

* Trade names: Alkathon, Fluon, Halon, Teflon, Tetran

tion of the toxicity of the products, but air concentrations should be kept below the limit of sensitivity of the analytic method

B² *Gasoline and/or petroleum distillates*.

The composition of these materials varies greatly and thus a single TLV for all types of these materials is no longer applicable. In general, the aromatic hydrocarbon content will determine what TLV applies. Consequently the content of benzene, other aromatics and additives should be determined to arrive at the appropriate TLV (Elkins, et al AIHA J 24 99, 1963)

Appendix C

B 1 THRESHOLD LIMIT VALUES
FOR MIXTURES

When two or more hazardous substances are present, their combined effect, rather than that of either individually, should be given primary consideration. In the absence of information to the contrary, the effects of the different hazards should be considered as additive. That is, if the sum of the following fractions,

$$\frac{C_1}{T_1} + \frac{C_2}{T_2} + \frac{C_n}{T_n}$$

exceeds unity, then the threshold limit of the mixture should be considered as being exceeded. C_i indicates the observed atmospheric concentration, and T_i the corresponding threshold limit. (See Example 1A a and 1A c)