

ces in these categories and for which no specific threshold limits have been assigned. This limit, for a normal work day, does not apply to brief exposures at higher concentrations. Neither does it apply to those substances which may cause physiologic impairment at lower concentrations but for which a threshold limit has not yet been adopted. Some "inert" particulates are given in Appendix D.

Simple Asphyxiants—"Inert" Gases or Vapors. A number of gases and vapors, when present in high concentrations in air, act primarily as simple asphyxiants without other significant physiologic effects. A TLV may not be recommended for each simple asphyxiant because the limiting factor is the available oxygen. The minimal oxygen content should be 18 percent by volume under normal atmospheric pressure (equivalent to a partial pressure, pO_2 , of 135 mm Hg). Atmospheres deficient in O_2 do not provide adequate warning and most simple asphyxiants are odorless. Several simple asphyxiants are listed in Appendix E. Some asphyxiants present an explosion hazard. Account should be taken of this factor in limiting the concentration of the asphyxiant.

These limits are intended for use in the field of industrial hygiene and should be interpreted and applied only by persons trained in this field. They are not intended for use, or for modification for use, (1) as a relative index of toxicity, by making a ratio of two limits, (2) in the evaluation or control of community air pollution or air pollution nuisances, (3) in estimating the toxic potential of continuous uninterrupted exposures, (4) as proof or disproof of an existing disease or physical condition, or (5) for adoption by countries whose working conditions differ from those in the U.S.

Physical Factors. It is recognized that such physical factors as heat, ultraviolet and ionizing radiation, humidity, abnormal pressure and the like may place added stress on the body so that the effects from exposure at a threshold limit may be altered. Most of these stresses act

adversely to increase the toxic response of a substance. Although most threshold limits have built-in safety factors to guard against adverse effects of moderate deviations from normal environments, the safety factors of most substances are not of such a magnitude as to take care of gross deviations. For example, continuous work at temperatures above 90°F or over-time, extending the work-week more than 50%, might be considered gross deviations. In such instances judgment must be exercised in the proper adjustments of the threshold limit values.

These values are reviewed annually by the Committee on Threshold Limits for revision or additions, as further information becomes available.

"Notice of Intent" At the beginning of each year, proposed actions of the Committee for the forthcoming year are issued in the form of a "Notice of Intent." This Notice provides not only an opportunity for comment, but solicits suggestions of substances to be added to the list. The suggestions should be accompanied by substantiating evidence for a tentative limit.

As Legislative Code. The Conference does not consider the Threshold Limit Values appropriate matter for adoption in legislative codes and regulations and recommends against such use. If, however, the list is so used, the intent of the concepts contained in the Preface should be maintained and provisions should be made to keep the list current.

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RECOMMENDED VALUES (In Alphabetical Order)

Substance	ppm*	Mg/M ³ **
Acetaldehyde	200	360
Acetic acid	10	25
Acetic anhydride	5	20
Acetone	1,000	2,400
Acetonitrile	40	70
Acetylene dichloride, see 1,2 Dichloro-ethylene		
Acetylene tetrabromide	1	14
Acrolein	0.1	0.25
Acrylonitrile-Skin	20	45
Aldrin-Skin	—	0.25
Allyl alcohol-Skin	2	5
Allyl chloride	1	3
C Allyl glycidyl ether (AGE)	10	45
Allyl propyl disulfide	2	12
2 Aminoethanol, see Ethanolamine		
Ammonia	50	35
Ammonium sulfamate (Ammate)	—	15
n-Amyl acetate	100	525
Aniline-Skin	5	19
+ Anisidine (o, p-isomers)-Skin	—	0.5
Antimony & compounds (as Sb)	—	0.5
ANTU (alpha naphthyl thiourea)	—	0.3
Arsenic & Compounds (as As)	—	0.5
Arsine	0.05	0.2
Barium (soluble compounds)	—	0.5
C Benzene (benzol)-Skin	25	80
Benzidine-Skin	—	A1
p-Benzoquinone, see Quinone		
+ Benzoyl peroxide	—	5
Benzyl chloride	1	5
Beryllium	—	0.002
† Biphenyl, see Diphenyl		
Boron oxide	—	15
C Boron trifluoride	1	3
Bromine	0.1	0.7
Butadiene (1,3-butadiene)	1,000	2,200
Butanethiol, see Butyl mercaptan		
2-Butanone	200	590
2-Butoxy ethanol (Butyl Cellosolve)-Skin	50	240
† Butyl acetate (n-butyl acetate)	—	—
Butyl alcohol	100	300
tert. Butyl alcohol	100	300
C Butylamine-Skin	5	15
C tert. Butyl chromate (as CrO3)-Skin	—	0.1
n-Butyl glycidyl ether (BGE)	50	270
Butyl mercaptan	10	35

* Parts of vapor or gas per million parts of air plus vapor by volume at 25°C and 760 mm. Hg pressure.

** Approximate milligrams of particulate per cubic meter of air.

A Numbers, See Appendix A

† 1966 Addition

‡ See Tentative Limits

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