

TOXIC EFFECTS OF EXPOSURE TO VAPORS OF ALIPHATIC AMINES

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ALIPHATIC amines have been studied by pharmacologists as vasoconstrictors, bronchodilators or analeptics and, more recently, as analgetics and local anesthetics. Not as much attention has been paid to the toxic hazard which may arise from their manufacture or industrial use. Hanzlik¹ observed mild irritation of the eyes on exposure to the vapors of normal butylamines; acute exposure to dibutylamine in a concentration of about 1:75,000 was fatal for rats. Carpenter, Smyth and Pozzani² found that the acute toxicity of the same vapor is moderate.

TABLE 1.—Physical Properties of Monoethylamine, Diethylamine and Triethylamine

	Monoethylamine	Diethylamine	Triethylamine
Specific gravity 20 C./20 C.....	0.78-0.80	0.70-0.71	0.74-0.76
Flash point	Below 0 F. (70% aqueous solution)	Below 0 F. (open cup)	20 C. (open cup)
Freezing point	- 80.6 C.	- 50.0 C.	- 114.8 C.
Bolling point	16.6 C.	55.5 C.	89.5 C.
Vapor pressure (atmospheres).....	1.14 20 C.	1.00 55.4 C.	0.097 25 C.

Treon, Sigmon, Kitzmiller and Heyroth³ have seen severe irritation of the respiratory mucosa in several species of animals from the inhalation of diisopropylamine vapor in concentrations from 261 to 2,207 p. p. m. after various periods of exposure. Opacity of the cornea resulted from exposure to every concentration used; hydropic degeneration and cloudy swelling occurred when animals were exposed to 597

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