APPENDIX III

LOWER EXPOSURE LIMITS TABLE (LEL)

TOXIC CONCENTRATION, FLASH POINT, BOILING POINT, EXPLOSIVE LIMITS AND VAPOR DENSITY OF COMMON FLAMMABLE AND TOXIC LIQUIDS AND GASES

Substance	Threshold Limit Value ppm	Flash Point* °F	Boiling Point °F	Flammable Limits LOWER %	— UPPER %	Vapor Density Air = 1
Acetone	1000	0	134	2.6	12.8	2.0
Amyl Acetate	100	77	300	1.1	7.5	4.5
C Benzol (benzene)-skin	10	12	176	1.3	7.1	2.8
n Butyl acetate	150	72	260	1.7	7.6	4.0
n Butyl alcohol (butanol)-skin	50	84	243	1.4	11.2	2.6
Butyl cellosolve (2-butoxy ethanol)	50	141	340	1.1	10.6	
Carbon tetrachloride-skin	10	none	170	none	none	5.3
Cellosolve (2-ethoxyethanol)	200	104	275	2.6	15.7	3.0
Cellosolve acetate (2-ethoxyethyl acetate)	100	124	313	1.7	—	4.6
Chlorobenzene (monochlorobenzene)	75	85	270	1.3	7.1	3.9
Chloroform (trichloromethane)	10	none	142	none	none	4.0
Cyclohexane	300	−4	179	1.3	8.0	2.9
Cyclohexanone	50	111	313	1.1 @212°F	—	3.4
1, 2-Dichloroethylene	200	43	140	9.7	12.8	3.4
Ethyl acetate	400	24	171	2.2	11.0	3.0
Ethyl alcohol (ethanol)	1000	55	173	3.3	19.0	1.6
Ethyl ether	400	−49	95	1.9	48.0	2.6
Ethylene dichloride (1, 2-dichloroethane)	50	56	183	6.2	16.0	3.4
n Heptane	400	25	208	1.0	6.7	3.5
n Hexane	100	−22	156	1.1	7.5	3.0
Methane	—	Gas	−259	5.3	14.0	0.6
Methyl acetate	200	14	140	3.1	16.0	2.8

Methyl alcohol (methanol)-skin	200	52	147	6.7	36.0	1.1
Methyl butyl ketone (2-hexanone)-skin	25	79	262	1.2	8.0	3.5
Methyl cellosolve (2-methoxyethanol)-skin	25	105	255	2.5	14.0	2.6
Methyl cellosolve acetate-skin	25	111	292	1.7	8.2	4.1
Methyl chloroform (1, 1, 1 trichloroethane)	350	—**	165	10.5	15.5	4.6
Methyl ethyl ketone (2-butanone)	200	21	176	1.8	10.0	2.5
Methyl isobutyl ketone (hexone)-skin	100	73	244	1.4	7.5	3.5
Methyl propyl ketone (2-pentanone)	200	45	216	1.5	8.2	3.0
Methylene chloride (dichloromethane)	100	none	104	—	—	2.9
Natural Gas	—	Gas	—	3.8-6.5	13-17	—
Perchloroethylene (tetrachloro-ethylene)-skin	100	none	249	—	—	5.7
Petroleum distillates						
Naphtha	—	under 100	212 - 320	0.9	6.0	4.3
Safety solvent	—	100 & over	300 - 400	0.8	5.0	—
C Isophorone	5	184	419	0.8	3.8	4.8
Isopropyl acetate	250	40	194	1.8	8.0	3.5
Isopropyl alcohol-skin	400	53	181	2.0	12.0	2.1
Styrene monomer (phenylethylene)	100	90	295	1.1	6.1	3.6
Toluol (toluene)-skin	100	40	232	1.2	7.1	3.1
Trichloroethylene	100	90	189	12.5	90.0	4.5
Turpentine	100	95	300	0.8	—	4.7
Xylol (xylene)-skin	100	63	291	1.1	7.0	3.7

* Closed Cup (The temperature at which a vapor will ignite if it is in a closed container in contrast to an open container.)

** Non-flammable under ordinary conditions of temperature and pressure

FLASH POINT—is the temperature at which vapors given off by flammable solvent will burn with a flash but will not continue to burn until more solvent has evaporated.

LOWER EXPLOSIVE LIMIT—is the lowest concentration of flammable vapor that will "flash" when ignited. The energy of the explosion is at a minimum because the mixture is "lean".

UPPER EXPLOSIVE LIMIT—is the richest concentration of vapors that will flash when ignited. The energy of the explosion is low because the mixture is too "rich". Concentrations of vapors above or below the explosive limits will not burn.

VAPOR DENSITY—is the weight of the vapors of a solvent compared with air. For example, all flammable solvent vapors are heavier than air and will tend to fall to the floor and accumulate in low places. Some gases are lighter than air and will rise—example, methane.