



GAS	Formula	Rel. Density (Air = 1)	ACGIH TLV-TWA (PPM)	ACGIH TLV-STEL (PPM)	OSHA PEL (PPM)	OSHA Threshold Qty	EPA Threshold Qty
Ammonia	NH ₃	0.6	25	35	50	10,000 lbs	10,000 lbs
Arsine	AsH ₃	2.7 ^a	0.05	-	0.05	100 lbs	1,000 lbs
Boron Trichloride	BCl ₃	4.1 ^b	-	-	-	2,500 lbs	5,000 lbs
Bromine	Br ₂	-	0.1	0.2	0.1	1,500 lbs	10,000 lbs
Carbon Monoxide	CO	1.0 ^b	25	-	50	none	none
Chlorine	Cl ₂	2.5 ^a	0.5	1	1 [C]	1,500 lbs	2,500 lbs
Chlorine Dioxide	ClO ₂	-	0.1	0.3	0.1	1,000 lbs	1,000 lbs
Diborane	B ₂ H ₆	1.0 ^b	0.1	-	0.1	100 lbs	2,500 lbs
Dichlorosilane	SiH ₄ Cl ₂	3.5	-	-	-	-	-
Fluorine	F ₂	1.3	1	2	0.1	1,000 lbs	1,000 lbs
Germane	GeH ₄	2.6 ^b	0.2	-	-	none	none
Hydrogen	H ₂	0.1	asphyxiant	asphyxiant	asphyxiant	none	none
Hydrogen Chloride	HCl	1.3	-	5 [C]	5 [C]	5,000 lbs	5,000 lbs
Hydrogen Cyanide	HCN	0.9 ^c	-	4.7 [C]	10	1,000 lbs	none
Hydrogen Fluoride	HF	1.9	-	3 [C]	3	1,000 lbs	1,000 lbs
Hydrogen Selenide	H ₂ Se	2.8	0.05	-	0.05	150 lbs	500 lbs
Hydrogen Sulfide	H ₂ S	1.2	10	15	20 [C]	1,500 lbs	10,000 lbs
Methanol	CH ₃ OH	-	200	250	-	-	-
Methylene Chloride	CH ₂ Cl ₂	-	50	-	25	-	-
Methyl Iodide	CH ₃ I	-	2	-	5	7,500 lbs	-
Nitric Oxide	NO	1.0	25	-	25	250 lbs	10,000 lbs
Nitrogen Dioxide	NO ₂	2.6 ^d	3	5	5 [C]	250 lbs	none
Nitrogen Trifluoride	NF ₃	2.5 ^a	10	-	10	5,000	none
Oxygen	O ₂	1.1	n/a	n/a	n/a	none	none
Ozone	O ₃	1.7	-	0.1 [C]	0.1	100 lbs	none
Phosphine	PH ₃	1.2	0.3	1	0.3	100 lbs	5,000 lbs
Silane	SiH ₄	1.1 ^a	5	-	-	none	none
Sulfur Dioxide	SO ₂	2.3	2	5	5	1,000 lbs	5,000 lbs

Gas	Formula	Rel. Density (Air = 1)	Flash Point	LEL (% by vol.)	UEL (% by vol.)	K Factor	ACGIH TLV-TWA	ACGIH TLV-STEL	OSHA PEL	OSHA Threshold Qty	EPA Threshold Qty
Acetone	CH ₃ COCH ₃	2.0	-20°C	2.5%	12.8%	58	750 ppm	1,000 ppm	1,000 ppm	-	-
Ammonia	NH ₃	0.6*	gas	15.0%	28.0%	142	25 ppm	35 ppm	50 ppm	10,000 lbs	10,000 lbs
Benzene	C ₆ H ₆	2.8	-11°C	1.2%	7.8%	46	10 ppm	-	10 ppm	-	-
Butane	C ₄ H ₁₀	2.0	-60°C	1.5%	8.5%	66	800 ppm	-	-	-	-
Carbon Monoxide	CO	1.0	gas	12.5%	74.0%	105	25 ppm	-	50 ppm	-	-
Ethane	C ₂ H ₆	1.0	gas	3.0%	12.5%	76	asphyxiant	asphyxiant	-	-	-
Ethanol	C ₂ H ₅ OH	1.6	13°C	3.3%	19.0%	82	1,000 ppm	-	1,000 ppm	-	-
Ethylene	CH ₂ =CH ₂	1.0	gas	2.7%	3.6%	79	asphyxiant	asphyxiant	-	-	-
Ethylene Oxide	C ₂ H ₄ O	1.5	-29°C	3.0%	100.0%	58	1 ppm	-	1 ppm	5,000 lbs	10,000 lbs
Gas, Blast Furnace		n/a	gas	35.0%	74.0%	n/a	-	-	-	-	-
Gas, Coke Oven		n/a	gas	4.4%	34.0%	n/a	-	-	-	-	-
Heptane	C ₇ H ₁₆	3.5	-4°C	1.1%	6.7%	43	400 ppm	500 ppm	500 ppm	-	-
n-Hexane	C ₆ H ₁₄	3.0	-22°C	1.1%	7.5%	41	50 ppm	-	500 ppm	-	-
Hydrogen	H ₂	0.1	gas	4.0%	75.0%	86	asphyxiant	asphyxiant	-	-	-
Hydrogen Sulfide	H ₂ S	1.2	gas	4.0%	44.0%	46	10 ppm	15 ppm	20 ppm [C]	1,500 lbs	10,000 lbs
Isobutylene	CH ₂ =C ₃ H ₆	1.9	gas	1.8%	9.6%	n/a	-	-	-	-	-
Isopropyl Alcohol	(CH ₃) ₂ CHOH	2.1	12°C	2.0%	12.7%	n/a	400 ppm	500 ppm	400 ppm	-	-
Jet Fuel	JP-4	n/a	-23°C to -1°C	1.3%	8.0%	n/a	-	-	-	-	-
Jet Fuel	JP-6	<1.0	-38°C	0.6%	3.7%	n/a	-	-	-	-	-
Methane	CH ₄	0.6	gas	5.0%	15.0%	112	asphyxiant	asphyxiant	-	-	-
Methanol	CH ₃ OH	1.1	11°C	6.0%	36.0%	96	200 ppm	250 ppm	200 ppm	-	-
Methyl Ethyl Ketone	C ₂ H ₅ COCH ₃	2.5	-9°C	1.4%	11.4%	46	200 ppm	300 ppm	200 ppm	-	-
Methyl Mercaptan	CH ₃ SH	1.7	n/a	3.9%	21.8%	68	0.5 ppm	-	10 ppm [C]	5,000 lbs	10,000 lbs
Octane	C ₈ H ₁₈	3.9	13°C	1.0%	6.5%	42	300 ppm	375 ppm	500 ppm	-	-
Pentane	C ₅ H ₁₂	2.5	<-40°C	1.5%	7.8%	51	600 ppm	750 ppm	1,000 ppm	-	-
Propane	C ₃ H ₈	1.6	gas	2.1%	9.5%	62	asphyxiant	asphyxiant	-	-	-
Propylene (Propene)	CH ₃ CH=CH ₂	1.5	gas	2.0%	11.1%	58	asphyxiant	asphyxiant	-	-	-
Toluene	C ₆ H ₅ CH ₃	3.1	4°C	1.1%	7.1%	45	50 ppm	188 ppm	200 ppm	-	-
o-Xylene	C ₆ H ₄ (CH ₃) ₂	3.7	32°C	0.9%	6.7%	40	100 ppm	150 ppm	5 ppm	-	-

Notes:

Relative Density: Density of gas at 1 atmosphere at 25°C. n/a = not available. a=at 20°C b=at0°C c =at 31°C and d=at21.1°C. * Ammonia is heavier than air in cold temperatures (<10°C).

ACGIH TLV-TWA: Time weighted average concentration for 8 hour workday and 40 hour workweek to which workers can be repeatedly exposed without adverse effect.

ACGIH SLV-STEL: Concentration to which workers can be exposed for a short period of time, typically 15 minutes, without suffering from irritation, tissue damage, or narcosis. [C] refers to ceiling limit, the concentration which should never be exceeded.

OSHA PEL: Maximum time weighted average concentration for any 8 hour shift of a 40 hour workweek to which workers may be exposed, per 40 CFR 1910.1000 (40 CFR 1910.1047 for ethylene oxide). [C] refers to ceiling limit, the concentration which exposure may never exceed, per 40 CFR 1910.1000.

Threshold Quantity: Amount of substance that can be present before a facility is subject to jurisdiction of OSHA Process Safety Management regulation (40 CFR 1910.119) or EPA Risk Management Program regulation (40 CFR 68).

Flash point: "gas" indicates substance is a gas at normal ambient temperatures.

K Factor: (kcal gas / k target gas) x %LEL Cal gas = Displayed LEL. For true readings a combustible gas sensor must be calibrated with the gas it is meant to detect.