

Proper Combining Proportions for Perfect Combustion

Fuel	<u>vol O₂</u>	<u>vol air</u>	<u>wt O₂</u>	<u>wt air</u>	<u>ft³ O₂</u>	<u>ft³ air</u>	<u>m³ O₂</u>	<u>m³ air</u>
	vol fuel	vol fuel	wt fuel	wt fuel	lb fuel	lb fuel	kg fuel	kg fuel
Acetylene, C ₂ H ₂	2.50	11.9	3.08	13.3	36.5	174	2.28	10.8
Benzene, C ₆ H ₆	7.50	35.7	3.08	13.3	36.5	174	2.28	10.8
Butane, C ₄ H ₁₀	6.50	31.0	3.59	15.5	42.5	203	2.65	12.6
Carbon, C	—	—	2.67	11.5	31.6	150	1.97	9.39
Carbon monoxide, CO	0.50	2.38	0.571	2.46	6.76	32.2	0.422	2.01
Ethane, C ₂ H ₆	3.50	16.7	3.73	16.1	44.2	210	2.76	13.1
Hydrogen, H ₂	0.50	2.38	8.00	34.5	94.7	451	5.92	28.2
Hydrogen sulfide, H ₂ S	1.50	7.15	1.41	6.08	16.7	79.5	1.04	4.97
Methane, CH ₄	2.00	9.53	4.00	17.2	47.4	226	2.96	14.01
Napthalene, C ₁₀ H ₈	—	—	3.00	12.9	35.5	169	2.22	10.6
Octane, C ₈ H ₁₈	—	—	3.51	15.1	41.6	198	2.60	12.4
Propane, C ₃ H ₈	5.00	23.8	3.64	15.7	43.1	205	2.69	12.8
Propylene, C ₃ H ₆	4.5	21.4	3.43	14.8	40.6	193	2.54	12.1
Sulfur, S	—	—	1.00	4.31	11.8	56.4	0.74	3.52

Source: North American Combustion Handbook.