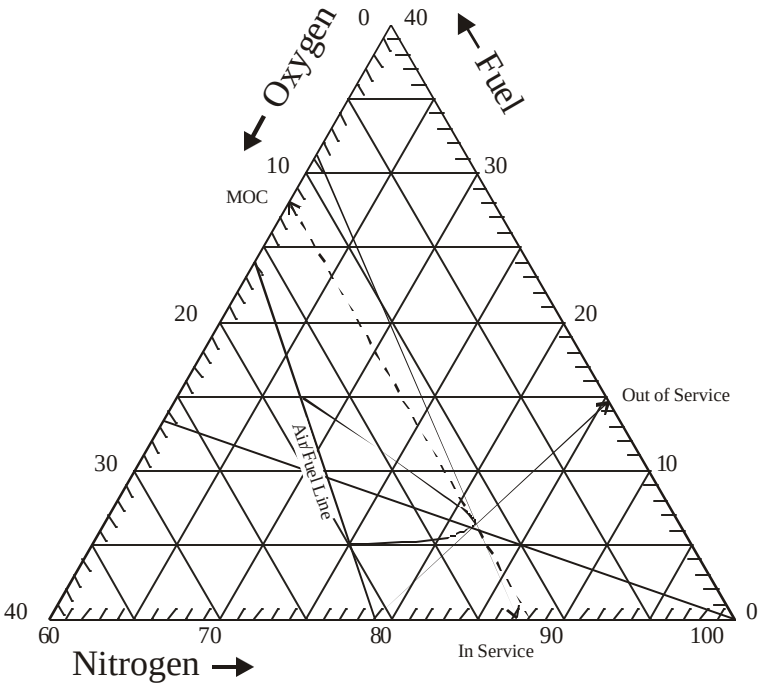
Methane

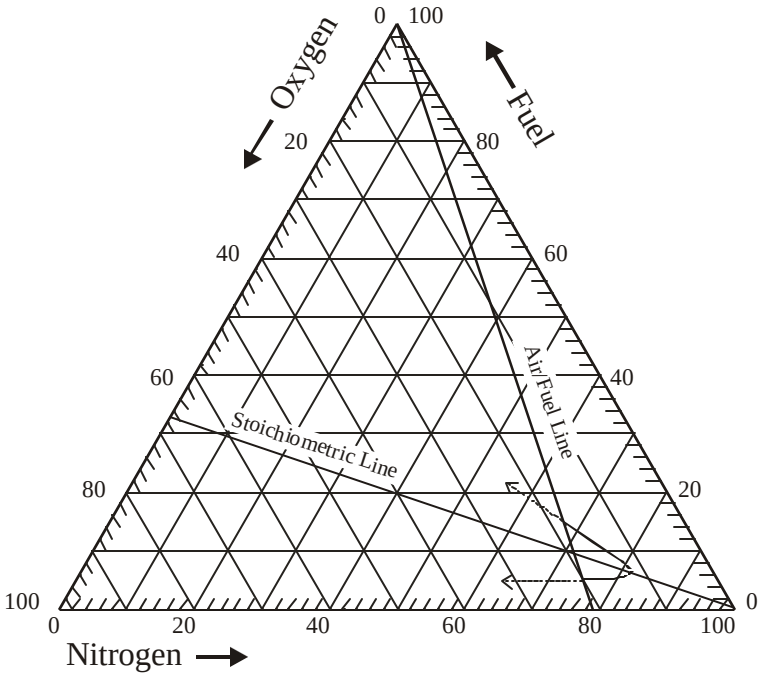
CH_4

25°C and Atmospheric Pressure

$$CH_4 + 2O_2 \longrightarrow CO_2 + 2H_2O$$

Triangular Plot Data From Reference 2





Molecular weight:	16.04
Boiling point:[1]	-161.45°C
LFL:[2]	5%
UFL:[2]	15%
MOC:	12% O_2
Flash point:[3]	-222.56°C

Vapor Pressure Equation:[4] $\ln P = A - \frac{B}{T(K) + C}$

P (mmHg)
93 to 120K
A = 15.2243
B = 897.84
C = -7.16

Concentration of vapor in air at 1 atm.: **%

From Figure:

In service Concentrations:	87% N_2
	13% O_2
Out of service Concentrations:	14.5% Fuel
	85.5% N_2

[1] Lide, D. R., Editor in chief, *Handbook of Chemistry and Physics*, 71st ed., CRC Press, Inc., Boston, 1991

[2] Zabetakis, M. G., *Flammability Characteristics of Combustible Gases and Vapors*, U.S. Dept. of the Interior, Bureau of Mines, No. 627, 1965

[3] Stephenson, R. M., *Flash Points of Organic and Organometallic Compounds*, Elsevier Science Publishing Co., Inc., New York, 1987

[4] Reid, R. C., Prausnitz, J. M., and Sherwood, T. R., *The Properties of Gases and Liquids*, 3rd ed. McGraw Hill, New York, 1977