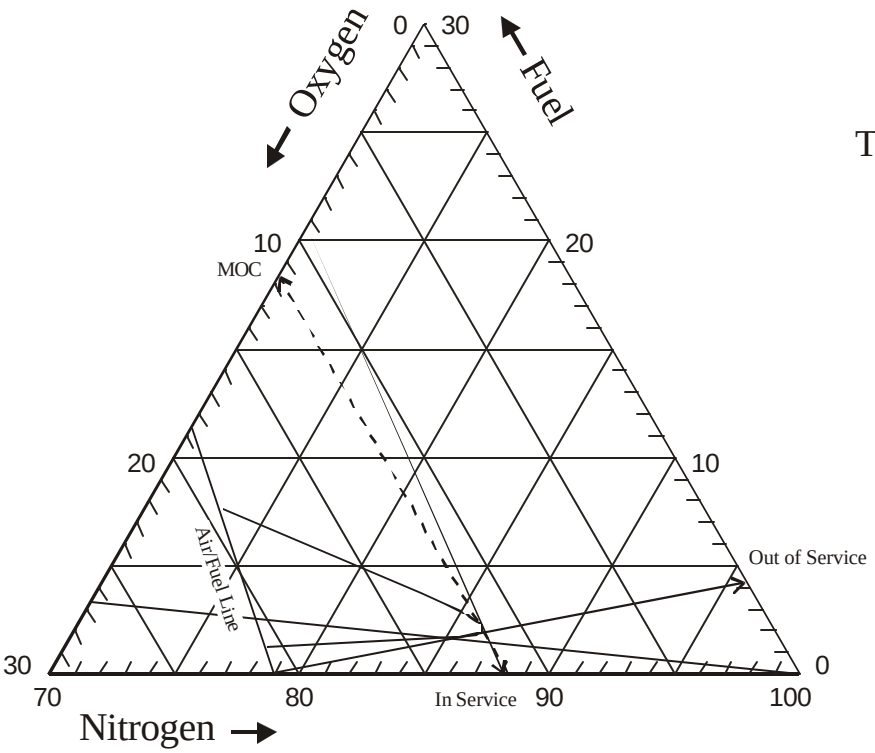
n-Pentane

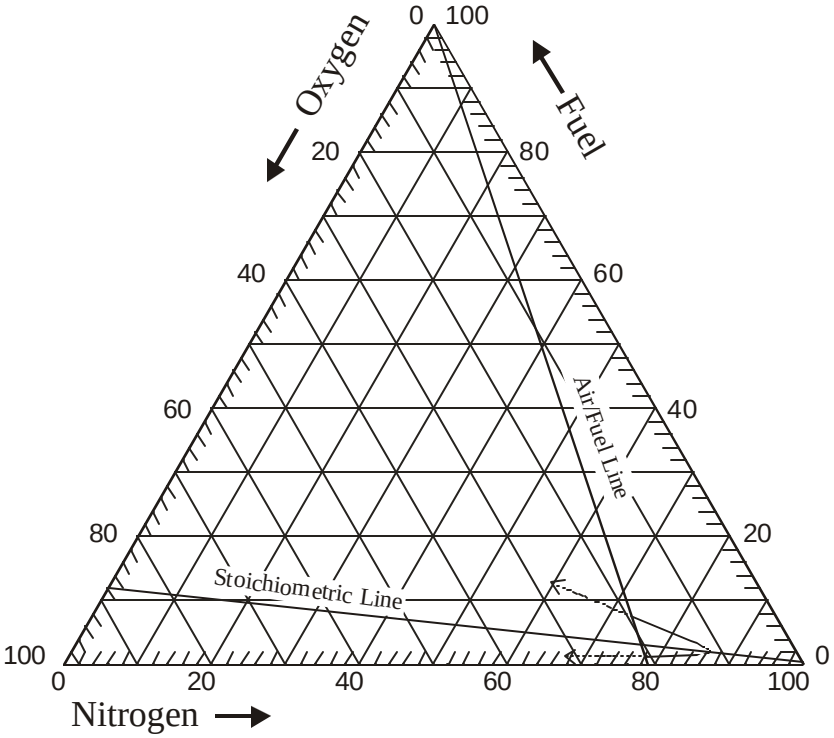
CH_3-CH_2-CH_2-CH_2-CH_3

25°C and Atmospheric Pressure

$$C_5H_{12} + 8O_2 \longrightarrow 5CO_2 + 6H_2O$$

Triangular Plot Data From Reference 2





Molecular weight:	72.2
Boiling point:[1]	36.1°C
LFL:[2]	1.3%
UFL:[2]	7.6%
MOC:	11.8% O_2
Flash point:[3]	-49.44°C

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

P (mmHg)
220 to 330K
A = 15.8333
B = 2477.07
C = -39.94

Concentration of vapor in air at 1 atm.: 67.5%

From Figure:

In service Concentrations:	88% N_2 12% O_2
Out of service Concentrations:	4.2% Fuel 95.8% 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