Heating Value and Relative Density Calculator

Calculations done per GPA 2172-09 w/ GPA 2145 Factors

Instructions: Choose from the drop down which standard measurement of water vapor content was used then enter the measured value in the box below. Enter in the unnormalized mol% section the numbers from the unnormalized section of the gas analysis, or use the numbers from the normalized section if unnormalized is unavailable.

Water Vapor in lbs/MMscf

54

Component	Unnormalized mol%	Normalized mol%
Methane	67.7730	67.1442
Ethane	17.6010	17.4377
Propane	7.8790	7.8059
I-Butane	0.9580	0.9491
n-Butane	2.5910	2.5670
i-pentane	0.4790	0.4746
n-pentane	0.6790	0.6727
Hexane	0.2660	0.2635
Hexane +	0.0000	0.0000
Heptane	0.0480	0.0476
Octane	0.0060	0.0059
Nonane	0.0010	0.0010
Decane	0.0000	0.0000
Ethylene	0.0000	0.0000
Propylene	0.0000	0.0000
CO2	0.8800	0.8718
H2S	0.0000	0.0000
Nitrogen	1.6560	1.6406
Oxygen	0.0050	0.0050
Helium	0.0000	0.0000
Water	0.1134	0.1134
Sums	100.8220	100.0000

If Using Dewpoint, Enter Flowing Temp & Pressure Below	
Flowing Temperature (deg F):	0
Flowing Pressure (PSIA):	0

Results

True Real Heating Value:	**1368.644**
True Relative Density:	**0.8139**
Dry Real Heating Value:	1370.160
Dry Relative Density:	0.8141
Assumed Wet Real Heating Value:	1346.751
Assumed Wet Relative Density:	0.8112
Ideal Heating Value:	1359.305
Ideal Gravity:	0.8106
Zb (Compression factor) -gas	0.9955
Zb (Compression Factor) -air	0.9996
Unnormalized Sum Within 3% of 100%? 43 CFR 3175.118(b)	☺

API 14.5 Annex C Method

This calculation is not the proper method

Only use to check if the operator is using this method

Dry Heating Value from Gas Analysis:	1370.200
True BTU Using Dry Value from BLM Calc:	1368.647
True BTU Using Dry Value from Operator:	1368.607