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Technical Instructions and Engineering Guidelines

GS-ENG-07-08: Conversion Factors for Gas Heating Values

Version 2.02

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Record Of Change

Revision	Date	Description
0.0	2007-01-10	Original Table by Sid Danielson, Project Engineer – Natural Gas Measurement
0.1	2007-07-25	Transfer into Recommendation by P.J. Hardock
0.2	2007-07-26	Editorials and review by Ron Willms, Senior Gas Program Officer
1.0	2007-07-27	Date of issue by P.J. Hardock
2.0	2010-10-14	Add BTU 15ºC and 60ºF and sort table by S. Danielson
2.01	2010-10-18	Editorials
2.02	2010-10-18	Editorials

1.0 Scope

The purpose of this document is to provide conversion factors for common used units of energy measurement.

2.0 References

1. *Electricity and Gas Inspection Act (R.S. 1985, c. E-4),*
2. *Canadian Metric Practice Guide* (CAN3-Z234.1-89),
3. *Recognition of the Canadian Standards Association (CSA) Standard Z234.1 Metric Practice Guide*. Measurement Canada, Bulletin GEN-36,
4. *Electricity and Gas Inspection Regulations.*

3.0 Introduction and Background

The following table lists the conversion factors for energy measurement including the appropriate number of significant figures authorized for use in trade measurement in Canada. Section 6(2) of the *Electricity and Gas Inspection Regulations* defines the Btu-60.5, while sections 41 through 44 of the same regulations stipulate that the only two units of measurement authorized for use in Canada for the sale of natural gas are the units of Btu-60.5 and the Joule.

These conversion factors are needed when the readings (or readouts) of gas analyzers and chromatographs are in units other than the legal units of Joule or Btu-60.5 Can.

To use the table, enter the table from the left hand column. Select the desired unit to convert from. Following the row horizontally to the right, select the column with the header indicating the unit to be conversed to. Read the conversion factor in the corresponding intersection between the row and column.

Table 1: Measurement Canada Recognized Energy Conversion Factors

	kJ	Joule	Btu (IT)	1 Btu (15°C)	Btu (59°F)	1 Btu (60°F)	Btu (60.5°F)
1 kJ	1	1000	0.947 817	0.948 047	0.948 047	0.948 155	0.948 213
1 Joule	0.001	1	0.000 947 817	0.000 948 047	0.000 948 047	0.000 948 155	0.000 948 213
1 Btu (IT)	1.055 056	1055.056	1	1.000 243	1.000 243	1.000 357	1.000 418
1 Btu (15°C)	1.054 800	1054.800	0.999 757	1	1	1.000 114	1.000 175
1 Btu (59°F)	1.054 800	1054.800	0.999 757	1	1	1.000 114	1.000 175
1 Btu (60°F)	1.054 680	1054.680	0.999 644	0.999 886	0.999 886	1	1.000 062
1 Btu (60.5°F)	1.054 615	1054.615	0.999 582	0.999 825	0.999 825	0.999 938	1