Gas Calorific Value Converter (MJ/Nm³, kcal/Nm³, Btu/scf)

Convert the heating value of a gas per volume between kJ/Nm³, MJ/Nm³, kcal/Nm³, Btu/scf, kWh/m³ and MJ/L, with reference conditions handled by the unit registry.

Method: Unit definitions per NIST SP 811 and the SI Brochure (exact where defined)

Input parameters

Unit system: SI

Parameter	Value	Unit
Heating value per volume (choose its unit)	37.800	MJ/Nm³

Calculated results

Parameter	Value	Unit
kJ/Nm³	37,800	kJ/Nm³
MJ/Nm³	37.800	MJ/Nm³
kcal/Nm³	9,028.4	kcal/Nm³
Btu/scf	959.86	Btu/scf
kWh/m³	10.500	kWh/m³

Notes for this case

• Natural gas gross heating value is about 37–40 MJ/Nm³ (about 9,000–9,500 kcal/Nm³, 1,000 Btu/scf); LPG vapour about 100 MJ/Nm³. Per normal cubic metre (0 °C) and per standard cubic foot (60 °F) refer to different gas quantities, which the registry's factors account for. Keep gross and net values apart; both are quoted.

Formula and method

$$H_{v,\mathrm{unit}} = \frac{H_{v,SI}}{f_{\mathrm{unit}}}$$

Variables

H_v	Heating value per volume (choose its unit)	J/m³

Method and standards

Calorific value units.

Assumptions and limits

- Registry reference conditions.

References

Unit definitions per NIST SP 811 and the SI Brochure (exact where defined)

Report details

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Release checks	2 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/general/unit-conversions/gas-calorific-value-converter

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.