Volume Unit Converter (m³, litre, gallon, barrel, ft³)

Convert a volume between cubic metres, litres, millilitres, cubic centimetres, cubic inches, feet and yards, US and imperial gallons and oil barrels.

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

Input parameters

Unit system: SI

Parameter	Value	Unit
Volume (choose its unit)	1.0000	m³

Calculated results

Parameter	Value	Unit
cubic metre	1.0000	m³
litre	1,000.0	L
millilitre	1,000,000	mL
cubic centimetre	1,000,000	cm³
cubic inch	61,024	in³
cubic foot	35.315	ft³
cubic yard	1.3080	yd³
US gallon	264.17	US gal
imperial gallon	219.97	imp gal
oil barrel (42 US gal)	6.2898	bbl

Notes for this case

- US and imperial gallons differ by about 20 %.

Formula and method

$$x_{\text{unit}} = \frac{x_{SI}}{f_{\text{unit}}}$$

Variables

x	Volume (choose its unit)	m³

Method and standards

Each unit's factor to the SI unit is held once in the unit registry.

Assumptions and limits

- Exact factors where the definition is exact.

References

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

Report details

Report reference	FCC-8522-PE95 (the same inputs always give the same reference)
Generated	17 November 2026, 19:47 UTC
Calculator	Volume Unit Converter (m^3, litre, gallon, barrel, ft^3)
Method last reviewed	12 November 2026
Software release	FireCAD Calc, release of 17 November 2026
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/volume-unit-converter

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.