

# C Conversions

## PSI and MPa or N/mm2 Conversions

Pounds per Square Inch (abbrev. PSI) - A basic unit of pressure or tension measurement in the Imperial or English System of Weights and Measures.

1 psi = .006895 MPa,  
1000 psi = 1 ksi

MegaPascal (abbrev. MPa) - A basic unit of pressure or tension measurement in the International System of Weights and Measures.

1 MPa = 145 psi,  
1 MPa = 1 N/mm2.

For oil field applications, units of measurement smaller than 1 psi usually have little meaning. Units of MPa may often appear with a decimal.

Example: 1000 psi = 6.895 MPa.

1 MegaPascal (MPa) = 1 Newton per Square Millimeter (N/mm2) = 145 Pounds per Square Inch (psi).

Psi, Ksi, MPa, and N/mm2 all express force measurement, either pressure (as fluid pressure) or load (as tension). All of these terms may appear as pressure ratings or test pressures, and tensile or yield requirements or test results.

### API Spec 6A specifies equipment pressure ratings in both PSI, and MPa as:

2,000 psi	=	13.8 MPa	=	138 bar
3,000 psi	=	20.7 MPa	=	207 bar
5,000 psi	=	34.5 MPa	=	345 bar
10,000 psi	=	69.0 MPa	=	690 bar
15,000 psi	=	103.5 MPa	=	1,035 bar
20,000 psi	=	138.0 MPa	=	1,380 bar

Bar pressure provided for information only.

To express PSI pressures in bars, convert PSI to MPa and move the decimal in the MPa value 1 space to the right, e.g. 5000 PSI = 34.5 MPa = 345 bar.

### API Spec 6A specifies material property requirements\* as:

Material Designation	Yield		Tensile	
	PSI	MPa	PSI	MPa
36 K	36,000	248	70,000	483
45 K	45,000	310	70,000	483
60 K	60,000	414	85,000	586
75 K	75,000	517	95,000	655

\*For Elongation and Reduction of Area, see API Spec 6A. The values specified for these requirements do not require conversion.

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C

D

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