

ENGINEERING INFORMATION - UNIT CONVERSIONS



19.7

Shaded area indicates change Rev. 4-99

English to Metric Conversions (continued)

PRESSURE or STRESS (Force/Area)		
To convert from	to	multiply by
atmosphere (normal = 760 torr)	pascal (Pa)	1.013 25 E+05
atmosphere (technical = 1 kgf/cm ²)	pascal (Pa)	9.806 650*E+04
bar	pascal (Pa)	1.000 000*E+05
centimeter of mercury (0°C)	pascal (Pa)	1.333 22 E+03
centimeter of water (4°C)	pascal (Pa)	9.806 38 E+01
decibar	pascal (Pa)	1.000 000*E+04
dyne/centimeter ²	pascal (Pa)	1.000 000*E-01
foot of water (39.2°F)	pascal (Pa)	2.988 98 E+03
gram-force/centimeter ²	pascal (Pa)	9.806 650*E+01
inch of mercury (32°F)	pascal (Pa)	3.386 389 E+03
inch of mercury (60°F)	pascal (Pa)	3.376 85 E+03
inch of water (39.2°F)	pascal (Pa)	2.490 82 E+02
inch of water (60°F)	pascal (Pa)	2.488 4 E+02
kilogram-force/centimeter ²	pascal (Pa)	9.806 650*E+04
kilogram-force/meter ²	pascal (Pa)	9.806 650*E+00
kilogram-force/millimeter ²	pascal (Pa)	9.806 650*E+06
kip/inch ² (ksi)	pascal (Pa)	6.894 757 E+06
millibar	pascal (Pa)	1.000 000*E+02
millimeter of mercury (0°C)	pascal (Pa)	1.333 224 E+02
poundal/foot ²	pascal (Pa)	1.488 164 E+00
pound-force/foot ²	pascal (Pa)	4.788 026 E+01
pound-force/inch ² (psi)	pascal (Pa)	6.894 757 E+03
psi	pascal (Pa)	6.894 757 E+03
torr (mm Hg, 0°C)	pascal (Pa)	1.333 22 E+02

VELOCITY (includes Speed)		
To convert from	to	multiply by
foot/hour	meter/second (m/s)	8.466 667 E -05
foot/minute	meter/second (m/s)	5.080 000*E -03
foot/second	meter/second (m/s)	3.048 000*E -01
inch/second	meter/second (m/s)	2.540 000*E -02
kilometer/hour	meter/second (m/s)	2.777 778 E -01
knot (international)	meter/second (m/s)	5.144 444 E -01
mile/hour (U.S. statute)	meter/second (m/s)	4.470 400*E -01
mile/minute (U.S. statute)	meter/second (m/s)	2.682 240*E+01
mile/second (U.S. statute)	meter/second (m/s)	1.609 344*E+03
mile/hour (U.S. statute)	kilometer/hour	1.609 344*E+00

VOLUME/TIME (includes Flow)		
To convert from	to	multiply by
foot ³ /minute	meter ³ /second (m ³ /s)	4.719 474 E -04
foot ³ /second	meter ³ /second (m ³ /s)	2.831 685 E -02
inch ³ /minute	meter ³ /second (m ³ /s)	2.731 177 E -07
yard ³ /minute	meter ³ /second (m ³ /s)	1.274 258 E -02
gallon (U.S. liquid)/day	meter ³ /second (m ³ /s)	4.381 264 E -08
gallon (U.S. liquid)/minute	meter ³ /second (m ³ /s)	6.309 020 E -05

VOLUME (includes capacity)		
To convert from	to	multiply by
acre-foot	meter ³ (m ³)	1.233 482 E+03
barrel (oil, 42 gal)	meter ³ (m ³)	1.589 873 E -01
boardfoot	meter ³ (m ³)	2.359 737 E -03
bushel(U.S.)	meter ³ (m ³)	3.523 907 E -02
fluid ounce(U.S.)	meter ³ (m ³)	2.957 353 E -05
foot ³	meter ³ (m ³)	2.831 685 E -02
gallon (Canadian liquid)	meter ³ (m ³)	4.546 090 E -03
gallon (U.K. liquid)	meter ³ (m ³)	4.546 092 E -03
gallon (U.S. dry)	meter ³ (m ³)	4.404 884 E -03
gallon (U.S. liquid)	meter ³ (m ³)	3.785 412 E -03
inch ³	meter ³ (m ³)	1.638 706 E -05
liter ⁴	meter ³ (m ³)	1.000 000*E -03
ounce(U.K. fluid)	meter ³ (m ³)	2.841 307 E -05
ounce(U.S. fluid)	meter ³ (m ³)	2.957 353 E -05
peck(U.S.)	meter ³ (m ³)	8.809 768 E -03
pint(U.S. dry)	meter ³ (m ³)	5.506 105 E -04
pint(U.S. liquid)	meter ³ (m ³)	4.731 765 E -04
quart(U.S. dry)	meter ³ (m ³)	1.101 221 E -03
quart(U.S. liquid)	meter ³ (m ³)	9.463 529 E -04
stere	meter ³ (m ³)	1.000 000*E+00
tablespoon	meter ³ (m ³)	1.478 676 E -05
teaspoon	meter ³ (m ³)	4.928 922 E -06
ton(register)	meter ³ (m ³)	2.831 685 E+00
yard ³	meter ³ (m ³)	7.645 549 E -01

* Exact - not rounded