

## ChemMaths Engineering tools:-

Suitable for students and professionals in the chemical, science, engineering, maths fields. Provides Equation Solving\information\Reference of on over 4000 chemical compounds. e.g. Organic/Inorganic elements, Periodic Table, Steam Table data, Acid and Base Dissociation Constants, General gas and liquid data etc.

Solve standard equations in the following categories Physics, Electrical Engineering, Maths - Geometry, Maths - Statics, Dimensionless Numbers, CSTR and more.

A unit conversion tool of over 300 predefined values and the ability to add your own.

The app is easy to use and convenient to have around.

Sci-Calculator can be used with the unit conversions and majority of chemical data.

Main Program Selection/Functional/Equations Groups are :-

Units

Physics

Electrical

Dimensionless Numbers

CSTR

Maths Information

Chemical Information

Chemical Data

Maths - Geometry

Maths - Statics

Maths - Series

Maths - Proportional Lengths

Maths - Interest

Maths - Areas & Volumes

Decanters

Pipes

Distillation

Hydrostatics

Heat Transfer, Exchangers

Vessel Design subjected to combine loading

Unit Groups :

ACCELERATION UNITS

AREA UNITS

CALORIFIC VALUE (VOL BASIS) UNITS

DENSITY UNITS

ENERGY UNITS

ENTHALPY UNITS

FORCE UNITS

FREQUENCY UNITS

HEAT FLUX UNITS

HEAT FLUX UNITS

HEAT TRANSFER COEFFICIENT UNITS

HENRYS LAW CONSTANT UNITS

LENGTH UNITS

MASS UNITS  
MASS FLUX UNITS  
POWER UNITS  
PRESSURE UNITS  
SPECIFIC HEAT UNITS  
SPECIFIC VOLUME UNITS  
MASS FLOW UNITS  
< -- USER DEFINED UNITS -- >  
TIME UNITS  
PLANE ANGLE UNITS  
TEMPERATURE UNITS  
VOLUME UNITS  
VELOCITY UNITS

The main Chemical Groups are :-

Thermodynamic Data  
Solids Data  
Physical Data  
Organic Data  
Acid and Base Dissociation Constants  
Acid and Base Dissociation Constants in Water  
Acid Base Indicators  
Liquids Data  
Anion\_Contributions\_Entropies  
Cation Contributions  
General Chemical Data  
Gas Data  
Steam Tables Pressure  
Periodic Table  
Standard Electrode Potentials Acidic  
Standard Electrode Potentials Basic  
Standard Heats Free Energies Formation  
Standard Heats Free Energies Formation Absolute Entropies  
Thermodynamic Data1  
Saturated Steam - Pressure  
Saturated Steam - Temperature  
SuperHeated Steam - Pressure - PSI  
Steam Table  
SuperHeated Steam Pressure - Bar  
Steam Table SI - Bar  
Also has a Sudoku game with standard features.

Features/ Information :

Main/Initial Screen :

Displays information for numerous Chemical compound (organic, inorganic, electrode potentials, physical, solid gas, gas data, Standard Heats Free Energies Formation, Acid Base Indicators, periodic table properties and more, Equations in Maths - Geometry, Physics, Electrical, Dimensionless Numbers, CSTR, Maths - Statics, Maths - Series, Maths - Areas & Volumes and more).

Access to the main features is via 2 main dropdownlist boxes containing the main categories and each sub categories.

Equations variables are automatically solved, displayed on each value change. Most equations have representative diagrams.

Settings Instructions : \n

1. Select the number of decimal values after the decimal . to appear in the result.i.e 2 means 1.XX from listbox.\n
2. Check if it is required to express the result in engineering form(scientific form) i.e.  $2e+4$ \n

Units Instructions : \n

1. Select Units group from listbox.\n
2. Select unit conversion from conversion listbox.\n
3. After selecting unit conversion result will calculated.Use number keypad, enter value to be converted.\n

Results calculated on clicking number or by clicking Calculate button on keypad. \n

Backkey and clear options remove enteries. \n

Use top Textbox for unit conversion and below textbox for Calculator.Calculator functions not used directly for conversions,use keypad copy buttons to copy conversion values to calculator textbox.

Use calculator functions cursor must be in below textbox.Standard calculator useage.Use equals button to calculate.Result is displayed below entry text.

Use  $\times 10^$  key raises number by a factor of 10 i.e. 10000 enter  $1 \times 10^5$  \n

The displayed reverse result is the unit conversion value calculated in the reverse direction. Click the viewer button to display common symbols used in the units display.\n

UNIT SYMBOLS \n

$\pi$  - Pi value (3.142..), mm - millimeter, km - kilometer \n

yd - yard, cm - centimeter \n

in - inch, ft - foot\n

m - metro, ha - hectare \n

kcal - kilocalorie \n

Btu - British thermal unit \n

Cal- calorie \n

MJ - mega joule (1,000,000 joules) \n

g - gram, mg - milligram \n

kg - kilogram, gal - gallon \n

KJ - kilojoule \n

kWh - kilo watt hour (1000 joules)

hp - horse power, lbf - pound force \n

W - watt, J - joule \n

h - hour, s - second \n

mN - milli newton \n

kgf - kilogram force \n

tonf - ton force, kN - kilo newton \n

N - newton, min - minute \n

psi - pounds per square inch \n

atm- atmosphere, dyn - dyne,l - liter \n

mmHg - millimeters of mercury \n  
cu- cubic, mi - mile oz - ounce, US - United States\n  
Imp -Imperial, Lux - Illuminance, Pb - Pebibyte\n