論文工程單位使用:

原則: 使用 SI (International System of Units)單位或 MET (Metrc Engineering Units)單位

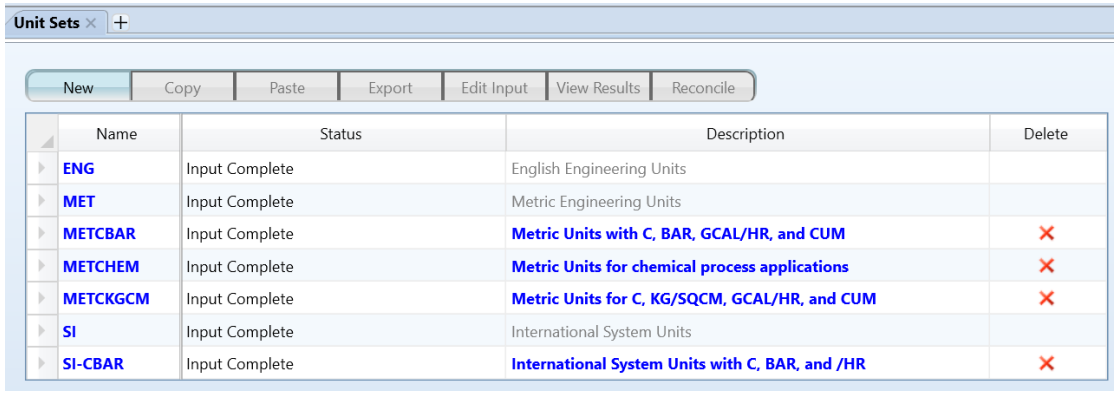
使用時注意事項:

	建議使用單位	說明
溫度	℃	(非 SI 單位)
壓力	Bar, Barg	絕對壓力用 Bar 相對壓力用 Barg
	Pa, Kpa	Pa (Pascal), Kpa 真空時用，為絕對壓力
流量	Kg/hr	質量流率
	m^3/hr	體積流率
熱焓	Kcal, Mcal, Gcal	(非 SI 單位)
熱焓流率	Kcal/hr, Mcal/hr, Gal/hr	(非 SI 單位)
功率	w, Kw	(非 SI 單位) 用於轉動設備

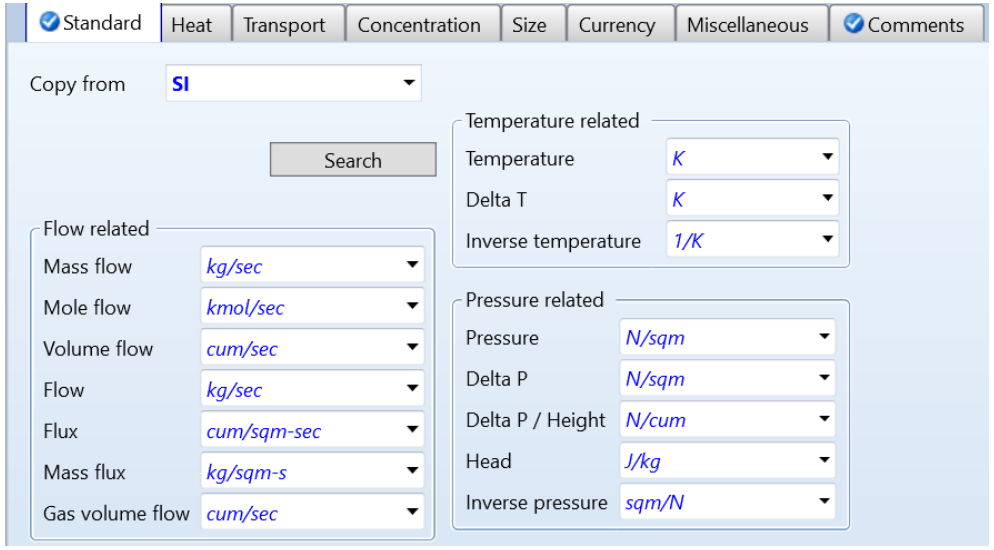
註:

1. 質能平衡表單位使用 ℃, Bar, kg/hr ; 如有需要 mol/hr 資料可放在論文最後附錄中。
2. Aspen 的 SI 單位使用，請參考附件 1 ASPEN Unit sets 及附件 2 Aspen 壓力單位選擇。

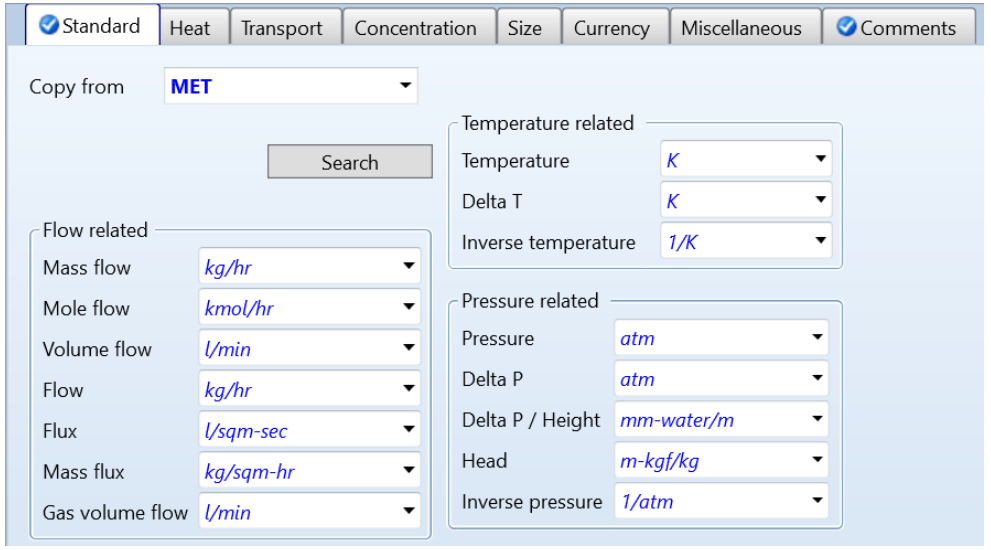
ASPEN Unit sets

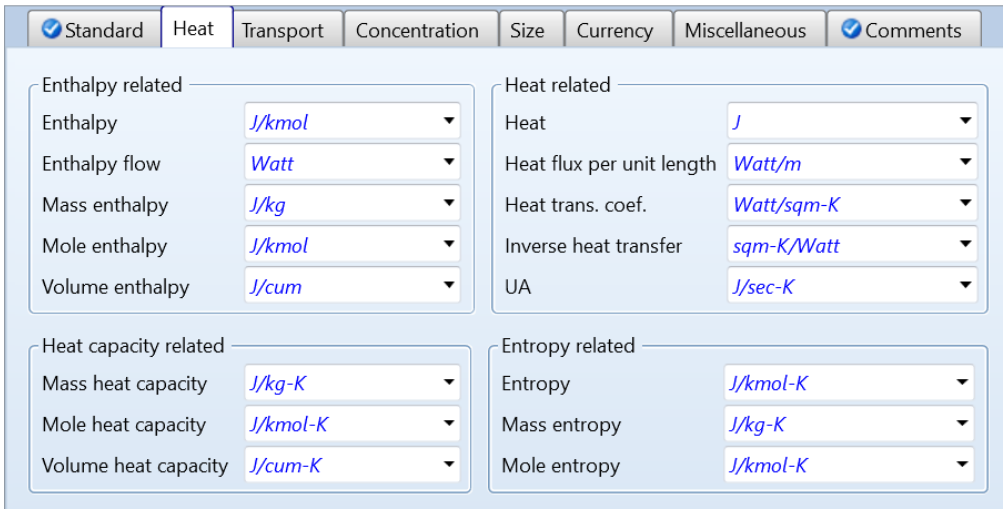


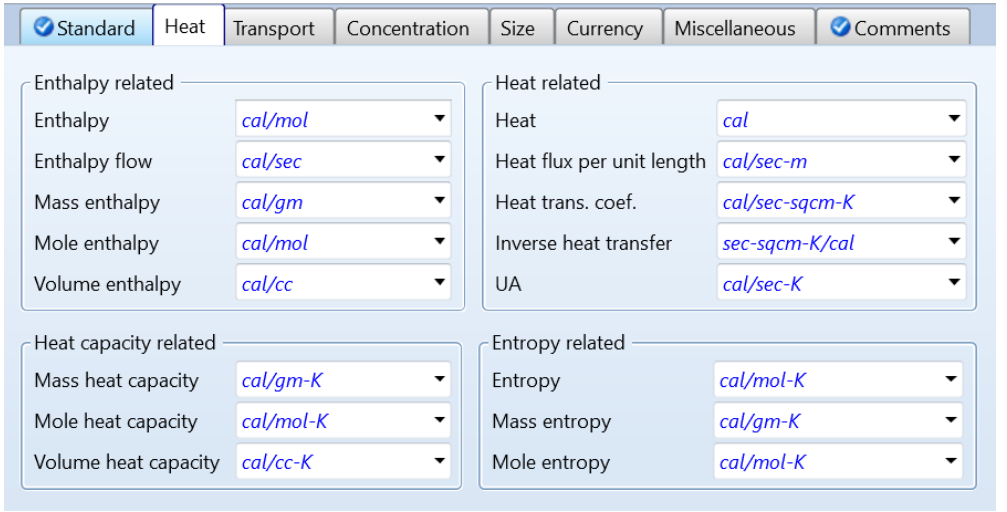
SI (International System Units)

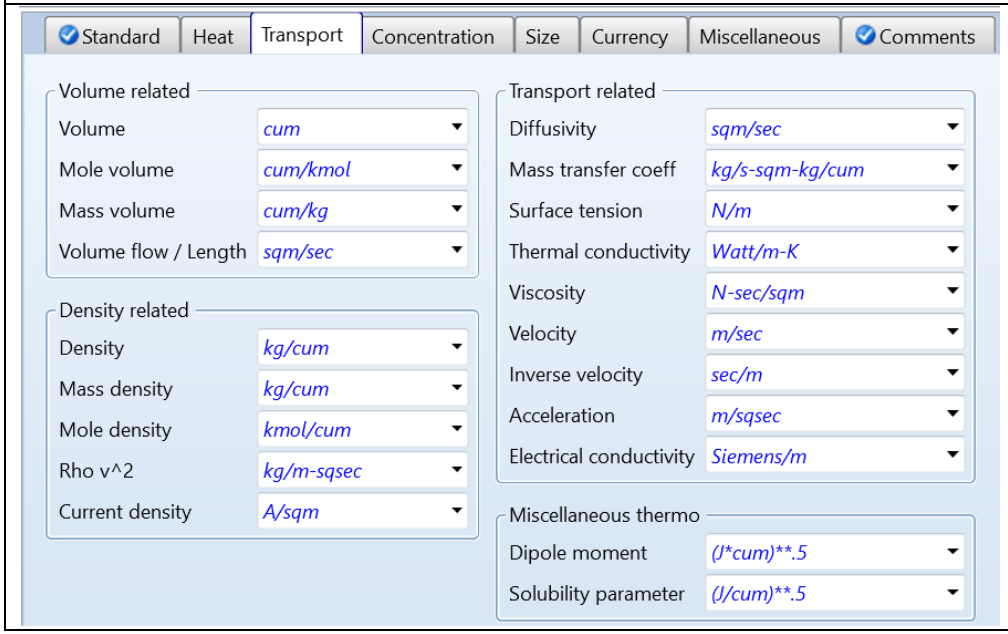


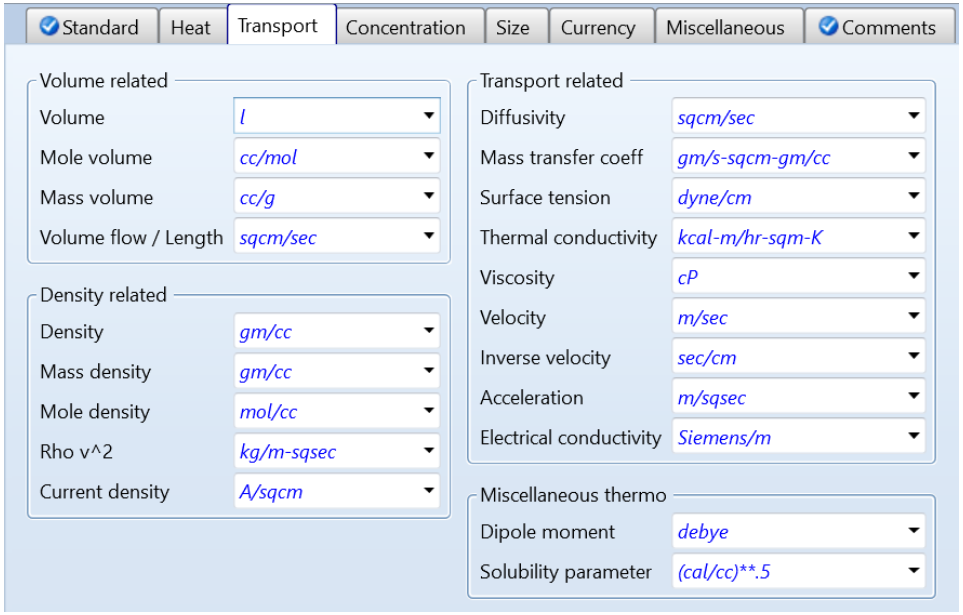
MET(Metric Engineering Units)

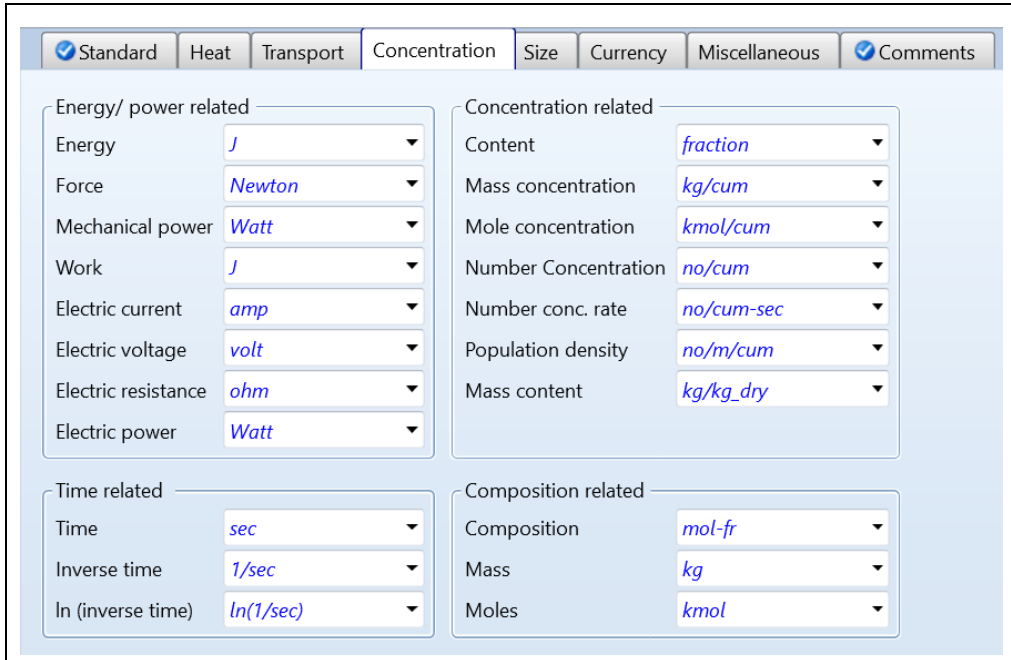


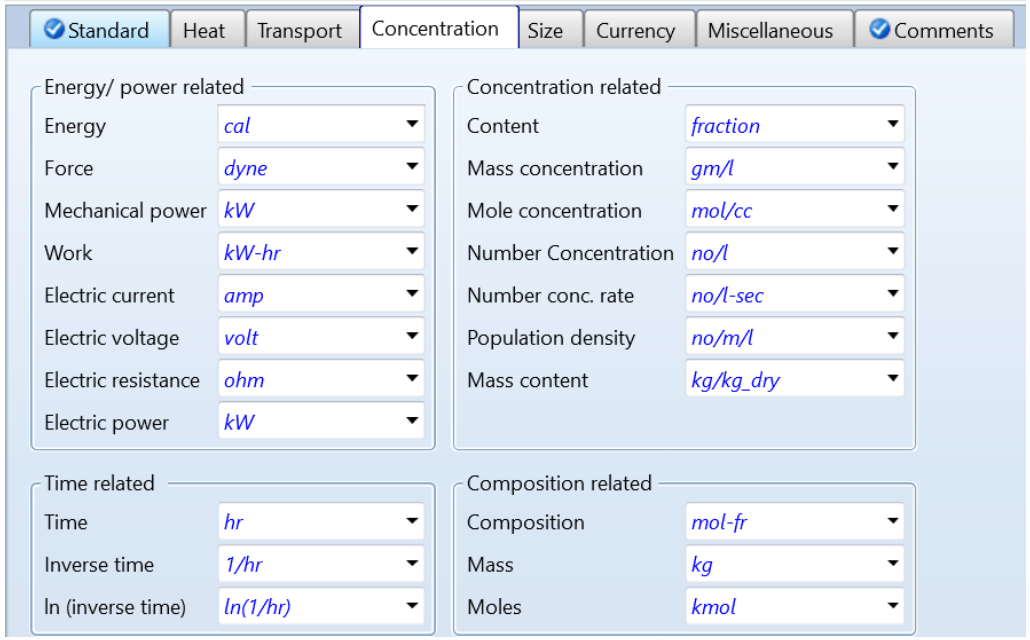

Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Comments
Enthalpy related
Enthalpy J/kmol
Enthalpy flow Watt
Mass enthalpy J/kg
Mole enthalpy J/kmol
Volume enthalpy J/cum
Heat related
Heat J
Heat flux per unit length Watt/m
Heat trans. coef. Watt/sqm-K
Inverse heat transfer sqm-K/Watt
UA J/sec-K
Heat capacity related
Mass heat capacity J/kg-K
Mole heat capacity J/kmol-K
Volume heat capacity J/cum-K
Entropy related
Entropy J/kmol-K
Mass entropy J/kg-K
Mole entropy J/kmol-K

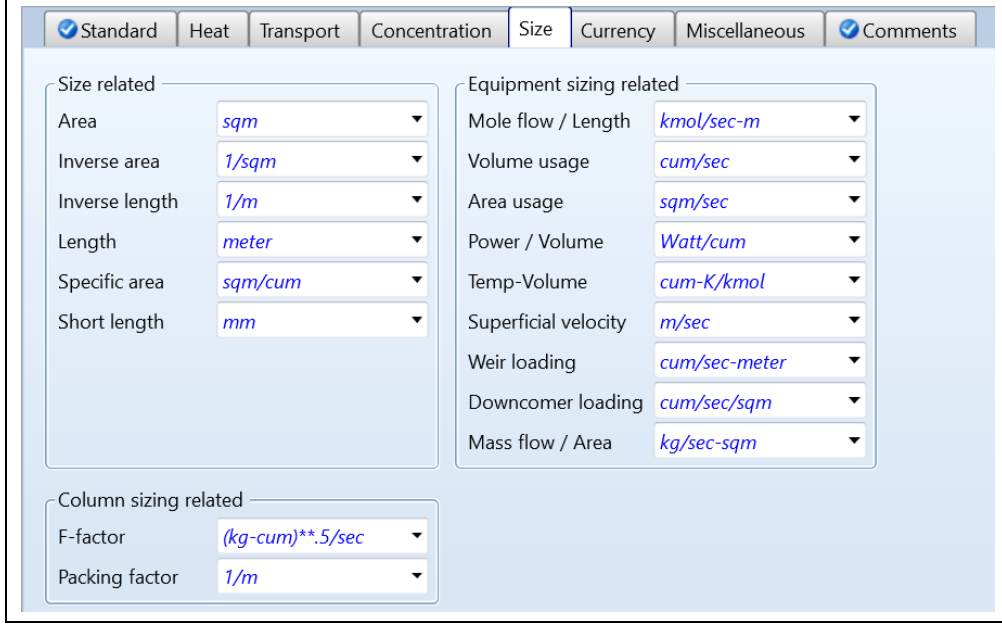

Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Comments
Enthalpy related
Enthalpy cal/mol
Enthalpy flow cal/sec
Mass enthalpy cal/gm
Mole enthalpy cal/mol
Volume enthalpy cal/cc
Heat related
Heat cal
Heat flux per unit length cal/sec-m
Heat trans. coef. cal/sec-sqcm-K
Inverse heat transfer sec-sqcm-K/cal
UA cal/sec-K
Heat capacity related
Mass heat capacity cal/gm-K
Mole heat capacity cal/mol-K
Volume heat capacity cal/cc-K
Entropy related
Entropy cal/mol-K
Mass entropy cal/gm-K
Mole entropy cal/mol-K

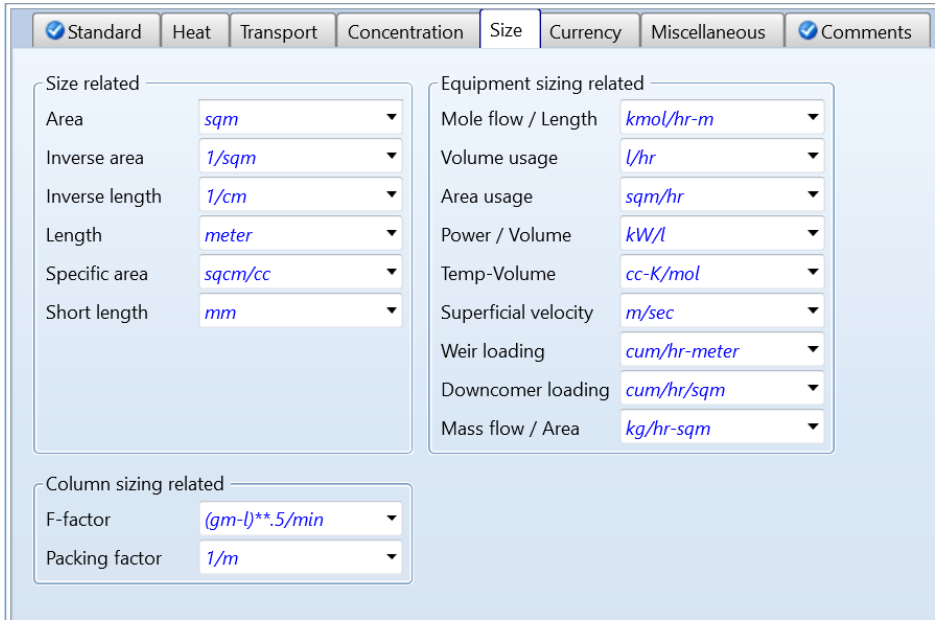

Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Comments
Volume related
Volume cum
Mole volume cum/kmol
Mass volume cum/kg
Volume flow / Length sqm/sec
Density related
Density kg/cum
Mass density kg/cum
Mole density kmol/cum
Rho v^2 kg/m-sqsec
Current density A/sqm
Transport related
Diffusivity sqm/sec
Mass transfer coeff kg/s-sqm-kg/cum
Surface tension N/m
Thermal conductivity Watt/m-K
Viscosity N-sec/sqm
Velocity m/sec
Inverse velocity sec/m
Acceleration m/sqsec
Electrical conductivity Siemens/m
Miscellaneous thermo
Dipole moment (J*cum)**.5
Solubility parameter (J/cum)**.5

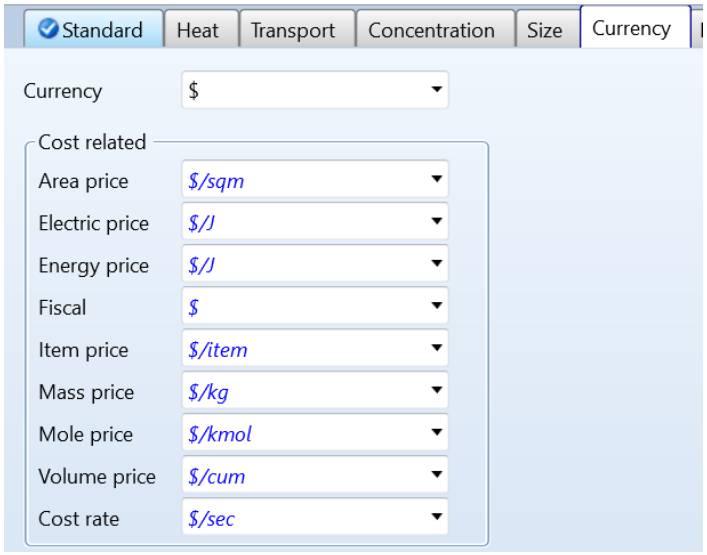

Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Comments
Volume related
Volume l
Mole volume cc/mol
Mass volume cc/g
Volume flow / Length sqcm/sec
Density related
Density gm/cc
Mass density gm/cc
Mole density mol/cc
Rho v^2 kg/m-sqsec
Current density A/sqcm
Transport related
Diffusivity sqcm/sec
Mass transfer coeff gm/s-sqcm-gm/cc
Surface tension dyne/cm
Thermal conductivity kcal-m/hr-sqm-K
Viscosity cP
Velocity m/sec
Inverse velocity sec/cm
Acceleration m/sqsec
Electrical conductivity Siemens/m
Miscellaneous thermo
Dipole moment debye
Solubility parameter (cal/cc)**.5

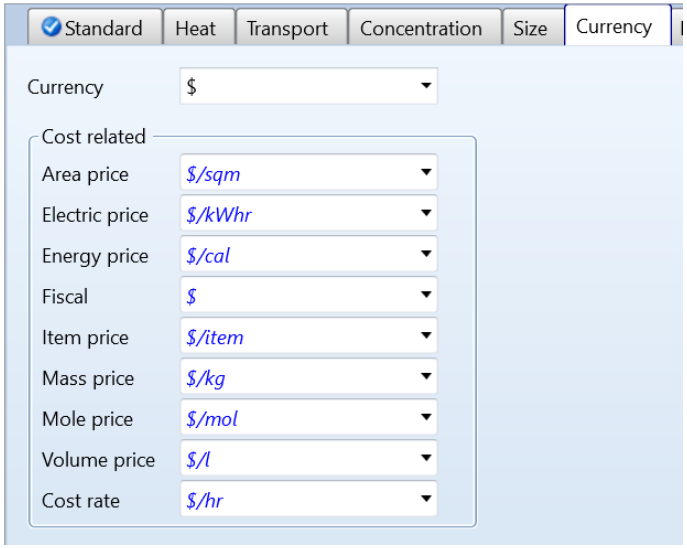

Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Comments
Energy/ power related
Energy J
Force Newton
Mechanical power Watt
Work J
Electric current amp
Electric voltage volt
Electric resistance ohm
Electric power Watt
Concentration related
Content fraction
Mass concentration kg/cum
Mole concentration kmol/cum
Number Concentration no/cum
Number conc. rate no/cum-sec
Population density no/m/cum
Mass content kg/kg_dry
Time related
Time sec
Inverse time 1/sec
ln (inverse time) ln(1/sec)
Composition related
Composition mol-fr
Mass kg
Moles kmol

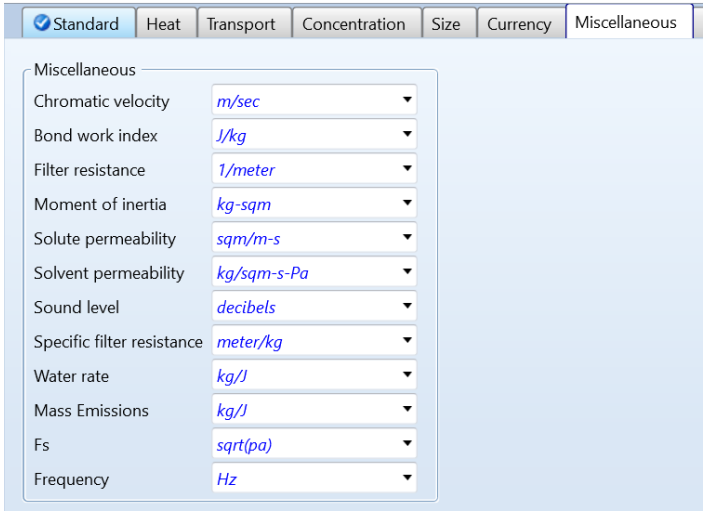

Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Comments
Energy/ power related
Energy cal
Force dyne
Mechanical power kW
Work kW-hr
Electric current amp
Electric voltage volt
Electric resistance ohm
Electric power kW
Concentration related
Content fraction
Mass concentration gm/l
Mole concentration mol/cc
Number Concentration no/l
Number conc. rate no/l-sec
Population density no/m/l
Mass content kg/kg_dry
Time related
Time hr
Inverse time 1/hr
ln (inverse time) ln(1/hr)
Composition related
Composition mol-fr
Mass kg
Moles kmol

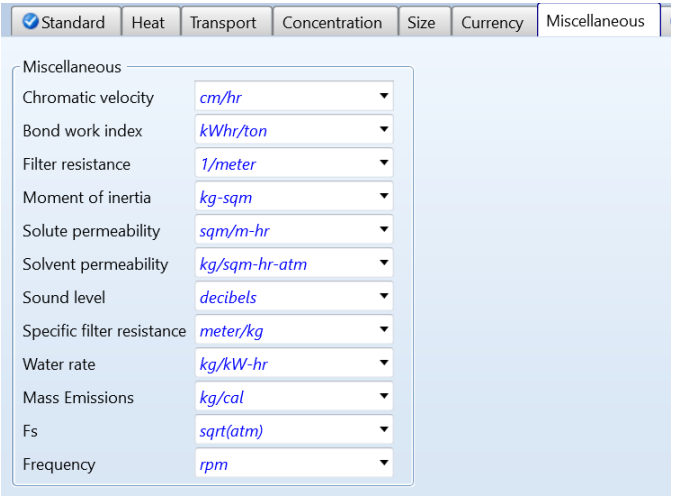

Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Comments
Size related
Area sqm
Inverse area 1/sqm
Inverse length 1/m
Length meter
Specific area sqm/cum
Short length mm
Equipment sizing related
Mole flow / Length kmol/sec-m
Volume usage cum/sec
Area usage sqm/sec
Power / Volume Watt/cum
Temp-Volume cum-K/kmol
Superficial velocity m/sec
Weir loading cum/sec-meter
Downcomer loading cum/sec/sqm
Mass flow / Area kg/sec-sqm
Column sizing related
F-factor (kg-cum)**.5/sec
Packing factor 1/m


Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Comments
Size related
Area sqm
Inverse area 1/sqm
Inverse length 1/cm
Length meter
Specific area sqcm/cc
Short length mm
Equipment sizing related
Mole flow / Length kmol/hr-m
Volume usage l/hr
Area usage sqm/hr
Power / Volume kW/l
Temp-Volume cc-K/mol
Superficial velocity m/sec
Weir loading cum/hr-meter
Downcomer loading cum/hr/sqm
Mass flow / Area kg/hr-sqm
Column sizing related
F-factor (gm-l)**.5/min
Packing factor 1/m

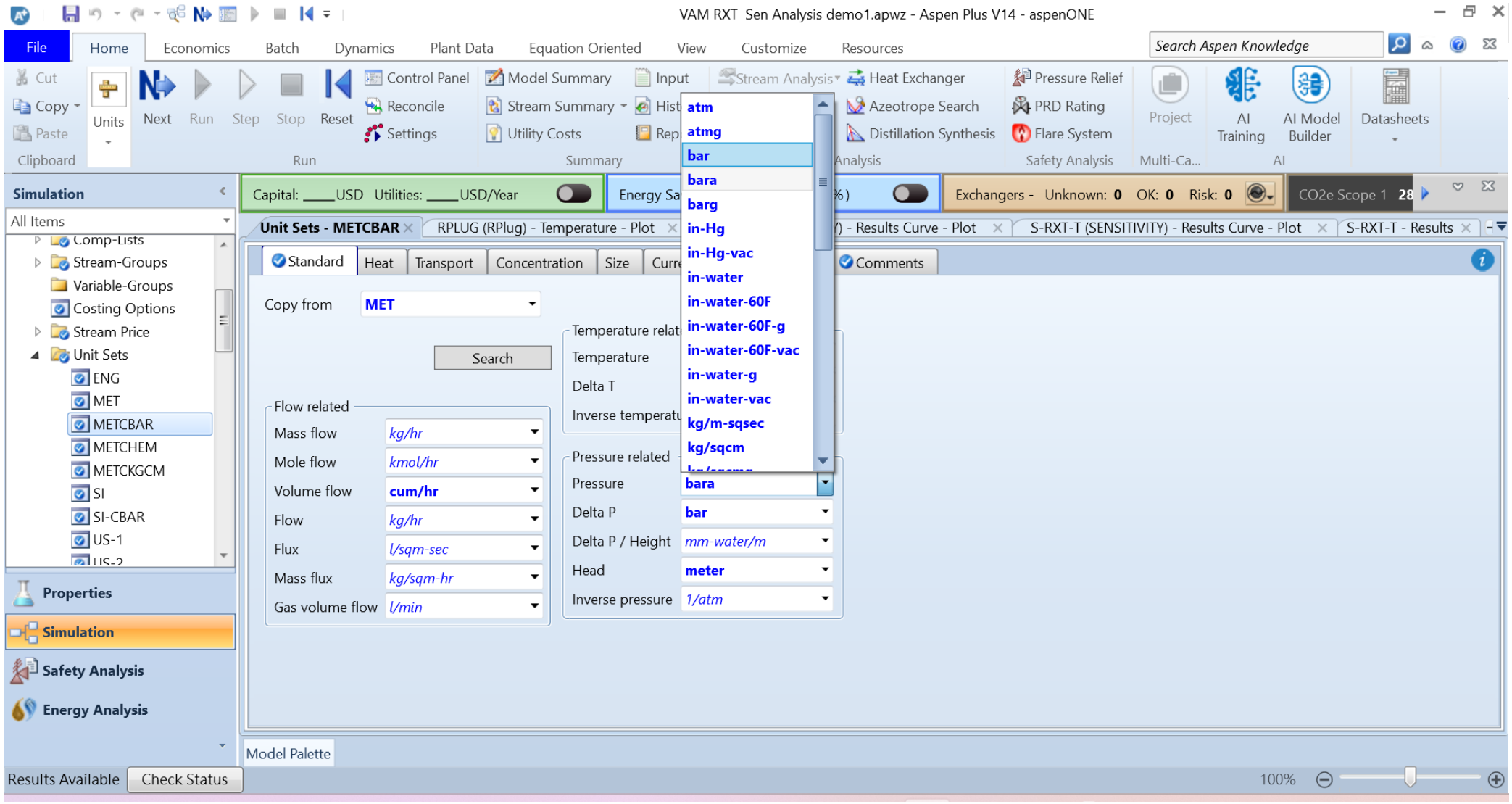

Standard
Heat
Transport
Concentration
Size
Currency
Currency
$
Cost related
Area price
$/sqm
Electric price
$/J
Energy price
$/J
Fiscal
$
Item price
$/item
Mass price
$/kg
Mole price
$/kmol
Volume price
$/cum
Cost rate
$/sec

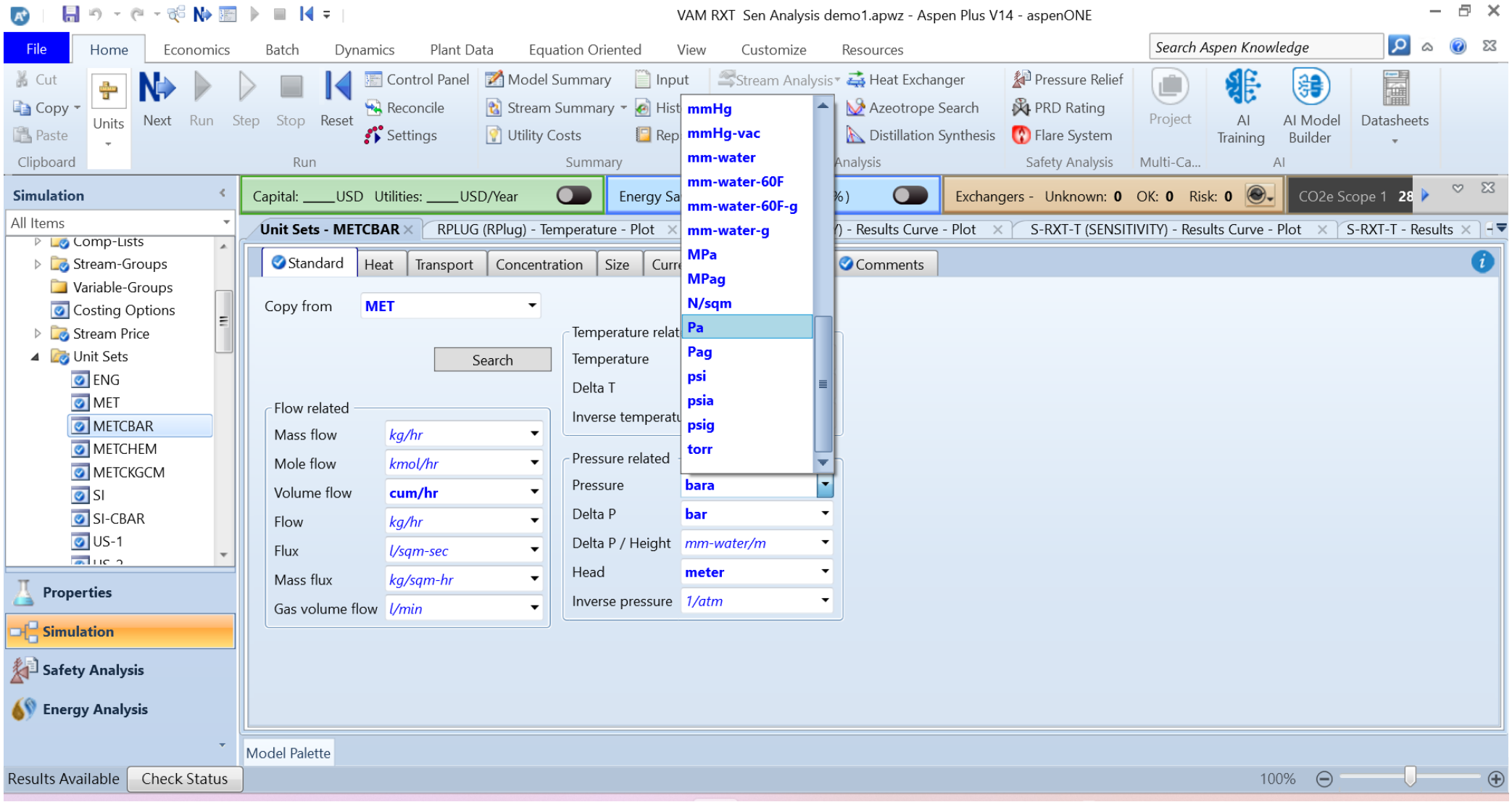

Standard
Heat
Transport
Concentration
Size
Currency
Currency
$
Cost related
Area price
$/sqm
Electric price
$/kWhr
Energy price
$/cal
Fiscal
$
Item price
$/item
Mass price
$/kg
Mole price
$/mol
Volume price
$/l
Cost rate
$/hr

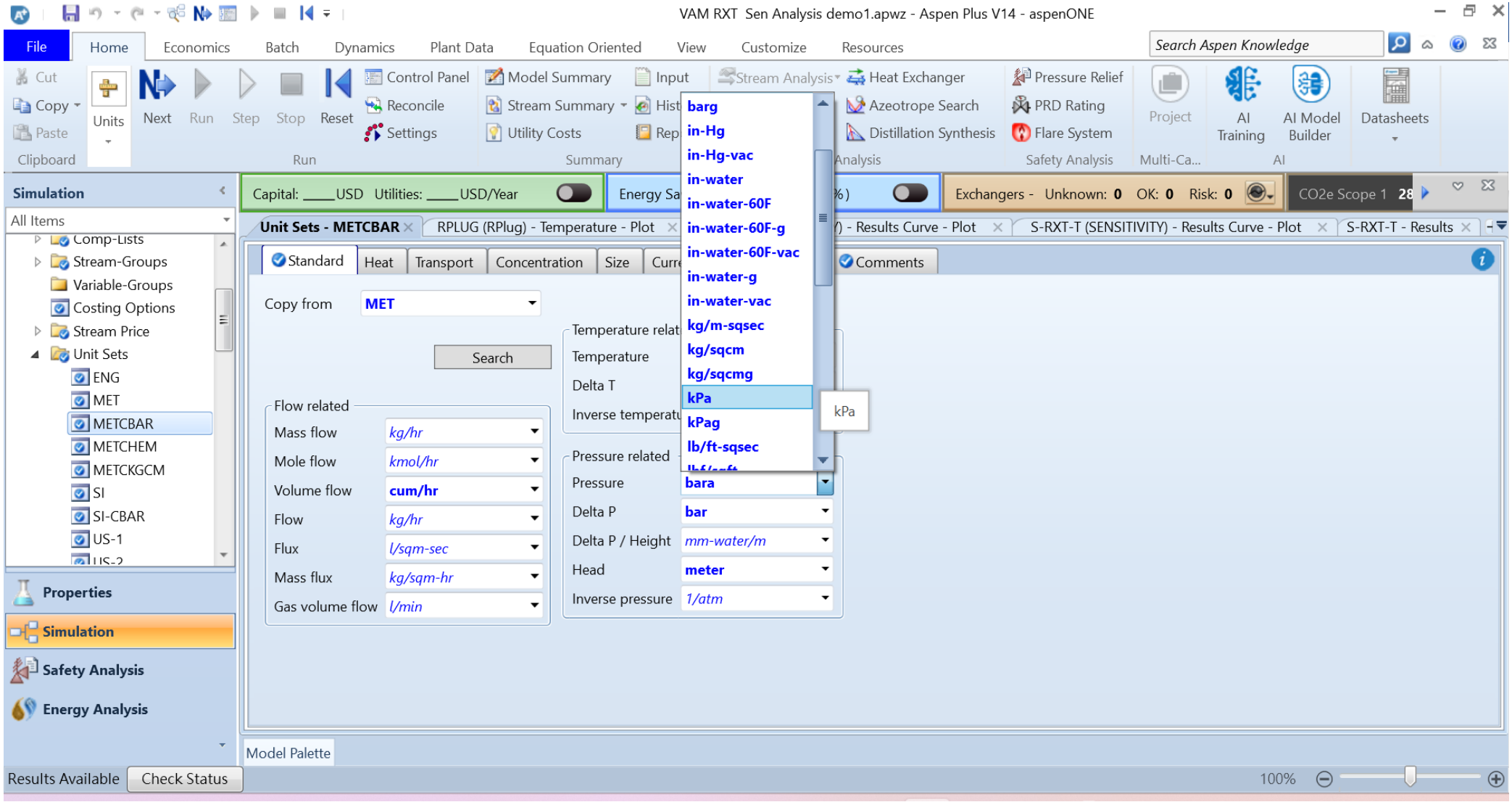

Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Miscellaneous
Chromatic velocity
m/sec
Bond work index
J/kg
Filter resistance
1/meter
Moment of inertia
kg-sqm
Solute permeability
sqm/m-s
Solvent permeability
kg/sqm-s-Pa
Sound level
decibels
Specific filter resistance
meter/kg
Water rate
kg/J
Mass Emissions
kg/J
Fs
sqrt(pa)
Frequency
Hz


Standard
Heat
Transport
Concentration
Size
Currency
Miscellaneous
Miscellaneous
Chromatic velocity
cm/hr
Bond work index
kWhr/ton
Filter resistance
1/meter
Moment of inertia
kg-sqm
Solute permeability
sqm/m-hr
Solvent permeability
kg/sqm-hr-atm
Sound level
decibels
Specific filter resistance
meter/kg
Water rate
kg/kW-hr
Mass Emissions
kg/cal
Fs
sqrt(atm)
Frequency
rpm

Aspen 壓力單位選擇




VAM RXT Sen Analysis demo1.apwz - Aspen Plus V14 - aspenONE
File
Home
Economics
Batch
Dynamics
Plant Data
Equation Oriented
View
Customize
Resources
Search Aspen Knowledge
Cut
Copy
Paste
Clipboard
Units
Next
Run
Step
Stop
Reset
Control Panel
Reconcile
Settings
Run
Model Summary
Stream Summary
Utility Costs
Input
Summary
Stream Analysis
Heat Exchanger
Azeotrope Search
Distillation Synthesis
Analysis
Pressure Relief
PRD Rating
Flare System
Safety Analysis
Project
Multi-Ca...
AI Training
AI Model Builder
AI
Datasheets
mmHg
mmHg-vac
mm-water
mm-water-60F
mm-water-60F-g
mm-water-g
MPa
MPag
N/sqm
Pa
Pag
psi
psia
psig
torr
Simulation
All Items
Comp-Lists
Stream-Groups
Variable-Groups
Costing Options
Stream Price
Unit Sets
ENG
MET
METCBAR
METCHEM
METCKGCM
SI
SI-CBAR
US-1
Properties
Simulation
Safety Analysis
Energy Analysis
Capital: ____USD Utilities: ____USD/Year
Exchangers - Unknown: 0 OK: 0 Risk: 0
CO2e Scope 1
Unit Sets - METCBAR
RPLUG (RPlug) - Temperature - Plot
S-RXT-T (SENSITIVITY) - Results Curve - Plot
S-RXT-T - Results
Standard
Heat
Transport
Concentration
Size
Comments
Copy from
MET
Search
Temperature relat
Temperature
Delta T
Inverse temperatu
Flow related
Mass flow
kg/hr
Mole flow
kmol/hr
Volume flow
cum/hr
Flow
kg/hr
Flux
l/sqm-sec
Mass flux
kg/sqm-hr
Gas volume flow
l/min
Pressure related
Pressure
bara
Delta P
bar
Delta P / Height
mm-water/m
Head
meter
Inverse pressure
1/atm
Model Palette
Results Available
Check Status
100%


VAM RXT Sen Analysis demo1.apwz - Aspen Plus V14 - aspenONE
File
Home
Economics
Batch
Dynamics
Plant Data
Equation Oriented
View
Customize
Resources
Search Aspen Knowledge
Cut
Copy
Paste
Clipboard
Units
Next
Run
Step
Stop
Reset
Control Panel
Reconcile
Settings
Run
Model Summary
Stream Summary
Utility Costs
Input
Stream Analysis
Heat Exchanger
Azeotrope Search
Distillation Synthesis
Summary
Analysis
Pressure Relief
PRD Rating
Flare System
Safety Analysis
Project
Multi-Ca...
AI Training
AI Model Builder
Datasheets
AI
Simulation
All Items
Comp-Lists
Stream-Groups
Variable-Groups
Costing Options
Stream Price
Unit Sets
ENG
MET
METCBAR
METCHEM
METCKGCM
SI
SI-CBAR
US-1
US-2
Properties
Simulation
Safety Analysis
Energy Analysis
Capital: ____USD Utilities: ____USD/Year
Energy Sa
%)
Exchangers - Unknown: 0 OK: 0 Risk: 0
CO2e Scope 1 28
Unit Sets - METCBAR
RPLUG (RPlug) - Temperature - Plot
) - Results Curve - Plot
S-RXT-T (SENSITIVITY) - Results Curve - Plot
S-RXT-T - Results
Standard
Heat
Transport
Concentration
Size
Curre
Comments
Copy from
MET
Search
Temperature relat
Temperature
Delta T
Inverse temperatu
Flow related
Mass flow
kg/hr
Mole flow
kmol/hr
Volume flow
cum/hr
Flow
kg/hr
Flux
l/sqm-sec
Mass flux
kg/sqm-hr
Gas volume flow
l/min
Pressure related
Pressure
bara
Delta P
bar
Delta P / Height
mm-water/m
Head
meter
Inverse pressure
1/atm
barg
in-Hg
in-Hg-vac
in-water
in-water-60F
in-water-60F-g
in-water-60F-vac
in-water-g
in-water-vac
kg/m-sqsec
kg/sqcm
kg/sqcmg
kPa
kPag
lb/ft-sqsec
kPa
Model Palette
Results Available
Check Status
100%