**Spanish to English translation**



OllinTS Commands

OllinTS is scheduled to address cases where the fraction specified mandatory mol of the mixture of which are derived from the following:

1. Pressure-Temperature  
2. Pressure-Enthalpy  
3. Vapor Pressure-Fraction  
4. Vapor Temperatura-Fraction Steam  
5. Temperature-Enthalpy

The commands described below should be applied from an object, the server can be  
property or to a thermodynamic event. The syntax for these commands is that they should be written after a point that separates the object at that point (? Object?.? Command?).

**Administrator Commands**  
In this section the object to which the commands apply it? Ollin? (Ollin.Solve ()), which is the server properties.  
● AddModel (A, B, C): Adds a thermodynamic model to the manager and returns the  
direction of the model created can be saved as a variable to access more quickly to the model created by following these specifications:

A: Specifies the name which identifies the thermodynamic model and which  
is stored in the administrator, the name must be a string.  
B: Specifies the state equation using the thermodynamic model, the options are  
the following.  
RKS = RedlichKwongSimplicado  
RK = RedlichKwong  
SRK = SoaveRedlichKwong  
PR = PengRobinson  
When you omit this argument, the server properties by using the RK model  
default  
C: Designates the equation by which to calculate the vapor pressure inside the model  
thermodynamic. OllinTS currently has a database for equations  
Antonie and Harlacher, although the latter still not recommended because the  
constants available in our database, the results are incorrect. If  
omit this argument using the Antoine equation.

● Add (A, B): Add one or more compounds that are available in the database,  
when the component is missing or does not match the database is done  
search for compounds that have some equivalence in the name and  
printed on the screen. The name should be written in CAPITAL LETTERS. Because  
components can not be repeated, ignored repeated compounds.

A: Specifies the compounds to be added.  
B: Specifies the thermodynamic model which adds the component.

● Remove (A, B): Deletes one or more compounds that are available in the model  
thermodynamically in the absence of the compound is printed an error message. Of Similarly, the name should be capitalized.

A: Specifies the compounds or deleted.  
B: Specifies the thermodynamic model which removes the component.

● AddCase (A, B): Adds a thermodynamic case back to the administrator and the direction of created if it can be stored in a variable for quicker access, the case  
created under the following specifications:

A: The name by which the administrator will identify this case.  
B: The name of the thermodynamic model which connects the appropriate thermodynamic when omitted, the administrator automatically connect this with the first thermodynamic model added to the administrator.

● LoadConst (A): Loads all the necessary constants for the thermodynamic model specified by the argument "A", if not specified will be loaded  
constant for all models that have been created.

● Connect (A, B): Connect a thermodynamic model [A], a thermodynamic case [B]. This command is used when you need to change the thermodynamic model which thermodynamic solve the case.

● Solve (A): Solve the thermodynamic case specified by the argument "A". When not specified, solve all possible cases, if not defined conditions print an error balance.

● Summary (A): Print the results of a case resolved by the argument specifying  
"A", if that is not resolved if you print an error message.  
● Comp (): Prints the compounds are in thermodynamic models

**Thermodynamic case commands**

For this section the object to which commands are applied is determined by the name you thermodynamic assigned to the case.  
● P (A): Specifies the value of the pressure for the plot? A? in Kpa.  
● T (A): Specifies the value of the temperature of the argument "A" in K.  
● FracVap (A): Specifies the vaporized fraction defined by the argument "A"  
● setX (A): Specifies the value of the global mole fraction defined by the argument "A", must be on a list, this command normalizes the concentration.  
● Rx (): Calculate the overall mole fraction from the fraction vaporized and  
concentrations of each of the phases  
● Reset (): Clears all intensive properties that define the terms used to calculate the phase equilibrium.  
● CasePrint (): Prints the values of the general intensive properties.  
● XPrint (): Prints the values of equilibrium concentrations  
● Get (A): Returns an array of values specified by the argument? A?, Which be stored in a variable or used immediately. Not to be confused with screen printing results. The names of the variables are listed in  
appendix.  
The result is a server capable of calculating properties of equilibrium phases and  
basic thermodynamic properties can be used to build larger programs  
complexity.  
Calculation of phase equilibrium-Example  
The following describes the procedure for the application server properties in a  
example of calculation of phase equilibrium.  
Example 1. Phase equilibrium temperature and pressure defined.  
To the mixture of hydrocarbons of Table 10 we want to know  
the temperature at which it must operate sudden evaporation  
so that the vaporized fraction of 0.5, at a pressure 101,325  
Kpa.  
Table 1. Composition of the hydrocarbon mixture  
Compound  
or  
Fraction  
Mol  
Ethane 0.05  
Propane 0.15  
N-Butane 0.25  
N-Pentane 0.20  
N-Hexane 0.35  
Application Procedure: The commands can be executed directly on the console  
Python command Start> All Programs> Python 2.4> Python (Comand line) or can be  
write the necessary commands and stored in a simple text file with the extension to p  
run together.  
From the command is invoked Python OllinTS  
>>> From ollin.Administrator.AdmOllin import Ollin  
Loading Data Base data.db  
\ ..........  
Figure 1.Separador evaporative  
sudden  
Create a thermodynamic models and naming  
>>> PR = Ollin.AddModel ("PR", "PR", "Antoine)

Adds the components of the mixture

>>> Ollin.Add (["Ethan", "PROPANE", "N-BUTANE", "N-Pentane", "N-HEXANE"], "PR")  
100 ETHANE add WAS component to PengRobinson  
add WAS component to 132 PROPANE PengRobinson  
181 N-BUTANE add WAS component to PengRobinson  
223 N-PENTANE add WAS component to PengRobinson  
add WAS component to 271 N-HEXANE PengRobinson  
Create and save thermodynamic cases within a variable  
>>> S1 = Ollin.AddCase ("S1")

Define whether the thermodynamic case  
>>> S1.SetX ([0.05,0.15,0.25,0.20,0.35])  
Specifies the equilibrium conditions  
>>> S1.FracVap (0.5)  
>>> S1.P (101 325)  
Solve the case  
>>> Ollin.Solve ()  
Solving S1 ...  
Defined Presure  
Defined FracVap ...  
Print results  
>>> Ollin.Resumen ()  
..:: Abstract:: ..  
FracVap = 0.5000  
Press kPa = 101,325  
Temp K = 295,273  
Z L = 0.006  
Z V = 0977  
Z = 0492  
Enthalpy kJ / kgmol = 2607.51497846  
Entropy KJ / KgmolK = 134.195509151  
MolWt Kg / kgmol = 67,241  
MolWt L Kg / kgmol = 76,538  
MolWt V Kg / kgmol = 57,945  
..:: Component:: .. <<Liq Fraction>> <<Vap Fraction>>  
ETHANE ==> |\_\_\_\_| 0.0954 0.0046  
PROPANE ==> |\_\_\_\_| 0.2605 0.0395  
N-BUTANE ==> |\_\_\_\_| 0.3415 0.1585  
N-Pentane ==> |\_\_\_\_| 0.1665 0.2335  
N-HEXANE ==> |\_\_\_\_| 0.1360 0.5640  
To access the thermodynamic results of a case using the command? Get? where  
specify the name of the variable. For example, to know the values of molar volume  
gas phase is in the variable? VVI? run the following command:  
>>> Print S1.Get (? VVI?)  
[24.09860111 23.92423415 23.67905276 23.34669897 22.90005727]  
Results: The temperature at which it must operate the flash evaporation equipment is 295,273 K,  
these conditions, the mixture was concentrated heavier compounds.  
Table 2.Composition in the balance  
Component Composition Composition phase gas liquid phase  
Ethane 0.0046 0.0954  
Propane 0.0395 0.2605  
N-Butane 0.1585 0.3415  
N-Pentane 0.2335 0.1665  
N-Hexane 0.5640 0.1360  
Case 1. Construction of a diagram  
phases  
If described as OlliTS can be used to construct the phase diagram which expresses the  
evolution of the vaporized fraction of a mixture of hydrocarbons, from the point of bubble to the  
dew point. This sample is located inside the folder OllinTS in the examples section  
under the name of diagrama.py.  
Table 3. Mix composition  
Compound Mol Fraction  
Ethane 0.05  
Propane 0.15  
N-Butane 0.25  
N-Pentane 0.20  
N-Hexane 0.35  
Application Procedure: The phase diagram is calculated for a pressure of 101,325 kPa,  
approximately the temperature is 240 K bubble and dew pressure is 300 K. For  
the data needed to construct the equilibrium diagram calculated at an interval of 2 K.  
The following describes the source code to build the phase diagram:  
Summons and pylab OllinTS  
ollin.Administrator.AdmOllin import from Ollin  
from pylab import \*  
Creates and adds the thermodynamic model compounds  
RK = Ollin.AddModel ("RK", "RK", "Antoine)  
Ollin.Add (["Ethan", "PROPANE", "N-BUTANE", "N-Pentane", "N-HEXANE"], "RK")  
Create a stream and defines the composition and pressure of the current  
S1 = Ollin.AddCase ("S1")  
S1.SetX ([0.05,0.15,0.25,0.20,0.35])  
S1.P (101 325)  
Sets the range of calculation of phase equilibria  
plot\_x = range (240,300,2)  
Define the variables where data is stored  
plot\_y0 = []  
plot\_y1 = []  
plot\_y2 = []  
plot\_y3 = []  
plot\_y4 = []  
plot\_y5 = []  
Start the calculation of equilibrium in the range of equilibrium  
for T in plot\_x:  
Define and solve the equilibrium temperature  
S1.T (T)  
Ollin.Solve ()  
Retrieves the values of the gas phase concentration at equilibrium  
f = S1.Get ("f")  
Save the results in variables  
plot\_y0.append (f [0])  
plot\_y1.append (f [1])  
plot\_y2.append (f [2])  
plot\_y3.append (f [3])  
plot\_y4.append (f [4])  
plot\_y5.append (S1.Get (FracVap "))  
Order calculations  
Plot the results  
plot (plot\_x, plot\_y0)  
plot (plot\_x, plot\_y1)  
plot (plot\_x, plot\_y2)  
plot (plot\_x, plot\_y3)  
plot (plot\_x, plot\_y4)  
plot (plot\_x, plot\_y5)  
Define the characteristics diagram  
axis ([244,300,0,1])  
grid (True)  
titles = RK.library  
titles.append ("FracVap)  
legend (titles)  
title ('Fraction Vapor Vs T, Y vs T ")  
xlabel ('T (K)')  
ylabel ('y, FracVap')  
Diagram shows  
show ()  
The resulting plot the implementation of this code represents the evolution of the concentration  
hydrocarbons in the gas phase.  
Results: The diagram shows that in the bubble point with a high incidence of  
ethane and with increasing the fraction vaporized and the presence of growing until the  
when the composition in the same initial mixing.  
Figure 2. Graph of phase equilibrium  
Case 2. Calculation of vapor pressure  
With the help of server properties can calculate the value of the corrected vapor pressure in  
The following example is plotted the values of the vapor pressure calculated by equation  
Antoine and Peng-Robinson equation for the N-Butane and n-heptane. This example is  
within OllinTS folder in the Examples section under the name of Presionv.py.  
Application Procedure: For the Peng-Robinson equation, vapor pressure is defined in  
a pure compound as the point where the value of fugacity for each phase is the same. The  
code by which to perform these graphs is written below.  
Summons OllinTS, pylab and lagrange interpolation tool  
ollin.Administrator.AdmOllin import from Ollin  
ollin.Tools.tools import from lagrange  
from pylab import \*  
Create a thermodynamic model and a case  
RK = Ollin.AddModel ("RK", "PR")  
S1 = Ollin.AddCase ("S1")  
Ollin.Add (["N-Heptane"], "RK")  
S1.SetX ([1,])  
Defines the temperature range  
Ti = range (300,450,10)  
Create the variables to save the results.  
Ppi = []  
PPV = []  
Start the calculation of vapor pressure  
for T in Ti:  
Create variables to store the iterations  
df = []  
P = []  
Define initial conditions and solve the balance  
S1.P (101 325)  
S1.T (T)  
Ollin.Solve ()  
Recover the initial values  
S1.Get Pvi = ("PreVap") [0]  
Ppi.append (PVI)  
fl = S1.Get (fl\_i ") [0]  
fv = S1.Get (fv\_i ") [0]  
P.append (S1.Get ("P"))  
df.append (fl-fv)  
S1.P (PVI)  
Ollin.Solve ()  
fl = S1.Get (fl\_i ") [0]  
fv = S1.Get (fv\_i ") [0]  
P.append (S1.Get ("P"))  
df.append (fl-fv)  
Calculate the error by the value of the fugacities  
E = fl-fv  
Start the iterations to calculate the vapor pressure  
while abs (E)> 1e-3:  
Pi = lagrange (df, P, 0)  
Pi print  
S1.P (Pi)  
Ollin.Solve ()  
fl = S1.Get (fl\_i ") [0]  
fv = S1.Get (fv\_i ") [0]  
P.append (S1.Get ("P"))  
E = fl-fv  
Add the results to the list of real values  
df.append (E)  
Ppv.append (Pi)  
Plot the results and define the characteristics of the graph  
plot (Ti, Ppi)  
plot (Ti, PPV)  
grid (True)  
titles = ["Antoine", "Peng-Robinson"]  
legend (titles)  
title ('Pressure Steam N-Heptane)  
ylabel ('P (kPa)')  
xlabel ('Temperature (K)')  
Graph shows  
show ()  
Figure 3. Vapor pressure of N-Butane  
Figure 4. Vapor pressure of N-Heptane  
Results: In both graphs shows the value of the vapor pressure calculated by  
cubic equation of state is higher than that calculated by the Antoine equation, besides the  
deviation between both methods is becoming wider as it reaches the critical point.  
Case 3. Design of a phase separator  
L-V  
At the exit of a reactor production of benzene from toluene, it has a phase separator  
type flash which you want to know the fraction vaporized and dimensions of equipment to recover  
benzene for a flow of the mixture of 1919.605 kgmol / hr to a temperature of 311.15 K and  
3206.062 kPa pressure. The feed composition is as follows:  
Table 4. Composition of the mixture of aromatic  
Compound Mol Fraction  
Hydrogen 0.36602  
Methane 0.54813  
Benzene 0.062618  
Toluene 0.021503  
Diphenyl 0.000945  
Application Procedure: The Flash tank dimensions are determined by the volume  
fluid processes, establishing a residence time of 5 minutes. For a vertical tank  
recommended that the tank height is the height that occupies the liquid plus three times the diameter and  
height ratio of the diameter is 4. This sample is located in the folder in OllinTS  
Examples section under the name of TanqueFlash.py.  
As the length of the flash tank will be:  
Flash tank length L = 3D   
V L  
 D2 (18)  
And the diameter:  
Flash tank diameter D = L4  
(18)  
Assembling and operating the two equations gives:  
Gas phase mole fraction L =  
3  256VL  
  
(18)  
Where:  
L = Length of tank  
D = Diameter of tank  
VL = Volume of liquid in the tank lies  
The script to solve the problem is described in detail  
Then, in this example OllinTS addition, the need to invoke the numerical value of π, the  
variable power array and method.  
Solving this with OllinTS we have the following code:  
OllinTS invokes the constant π, and the array variable  
ollin.Administrator.AdmOllin import from Ollin  
from Numeric import array, power, pi  
Create a thermodynamic model and defines the components  
PR = Ollin.AddModel ("PR", "PR")  
Ollin.Add (["HYDROGEN", "METHANE", "BENZENE", "TOLUENE", "diphenyl ",]," PR)  
Create a case and defined thermodynamic conditions  
S1 = Ollin.AddCase ("S1")  
S1.SetX ([0.366021,0.548913,0.062618,0.021503,0.000945])  
S1.T (38 273.15)  
S1.P (3206.062)  
Solve the case thermodynamic and prints the results  
Ollin.Solve ("S1")  
Ollin.Resumen ("S1")  
Calculate the flow rate, the resident volume, length and diameter  
tank  
L = (1-S1.Get (FracVap ")) \* 1919.605  
Gv = (L \* S1.Get ("))/( MolWt\_l S1.Get (LiqDen ") \* 60)  
Vr = Gv \* 5  
Lon = power ((256 \* Vr / ft) 0.333333)  
Dia = Lon / 4  
The results are printed  
print "LENGTH", Lon  
print "diameter", Dia  
The output of the execution of this code is:  
Loading Data Base data.db  
\ ..........  
Has-been loaded OllinTS  
19 HYDROGEN add WAS component to PengRobinson  
add WAS component to 61 PengRobinson METHANE  
add WAS component to 242 PengRobinson BENZENE  
add WAS component to 286 PengRobinson TOLUENE  
add WAS component to 429 PengRobinson diphenyl  
Solving S1 ...  
Defined Temperature  
Defined Presure ...  
..:: Abstract:: ..  
FracVap = 0.9138  
Press KPa = 3206.062  
Temp K = 311,150  
Z L = 0.132  
Z V = 1031  
Z = 0.954  
Enthalpy kJ / kgmol = 6499.86626874  
Entropy KJ / KgmolK = 236.251421265  
MolWt Kg / kgmol = 16,562  
MolWt L Kg / kgmol = 74,482  
MolWt V Kg / kgmol = 11,098  
..:: Component:: .. <<Liq Fraction>> <<Vap Fraction>>  
HYDROGEN ==> |\_\_\_\_| 0.3990 0.0164  
METHANE ==> |\_\_\_\_| 0.5908 0.1051  
BENZENE ==> |\_\_\_\_| 0.0089 0.6317  
TOLUENE ==> |\_\_\_\_| 0.0013 0.2359  
Diphenyl ==> |\_\_\_\_| 0.0000 0.0110  
LENGTH (m) 4.6729013708  
Diameter (m) 1.1682253427  
Results: In the flash tank operation shows that the most  
hydrogen and methane in the gas phase, so that benzene is  
in the liquid phase. You are the dimensions of a diameter of 1.1682 and a  
height of 4.6729 meters. indeed  
Creating the database  
The following describes the procedure to create a database from SQL format  
a spreadsheet with the help of a GUI for SQLite calls? SQLite Data  
Browser? [SQlbrow, 2007].  
Initially available in the spreadsheet  
contains all necessary data, which  
be stored in a spreadsheet  
white columns should have no  
extra data. For example the name of the column.  
Save the new spreadsheet format  
CSV (comma delimited) that can be  
used by SQLite Database Browser  
This window appears to warn us that we are selecting a format that does not support sheets  
when you save multiple worksheet. You select the "OK" to continue  
the process.  
The appearance of this sale, you press the "Yes" to save the database in the format  
CSV SQLite Database Browser.  
Once you create the CSV file is run SQLite  
Database Browser, which is also a program  
open source. Can be downloaded from the website  
www.souceforge.net  
SQLite Database Browser allows you to create the basis  
data in a very easy, since no  
need to know SQL. Addition  
to be very close to the appearance of a leaf  
calculation.  
Then create a database where  
insert our information. This can be  
done through the menu "File> New DataBase  
[Ctrl N] "  
By selecting this option appears to save  
window for selecting the directory and  
name for the database. For this example  
database.db uses the name.  
Then you import the spreadsheet  
previously created format. To  
select the directory and file name  
import menu is selected  
File> Import> Table from CSV file.  
Through this window is selected  
directory and file name. For this  
example file is named database.csv  
and finally select the option open.  
This window shows the result of process  
CSV file import. In the "New  
table name: "name is written" component ", this is  
the name by which OllinTS accesses to the database  
data. To create the base of the imported data s  
select the "Create"  
This sale confirms that it has imported  
information. Now we proceed to give the names  
right to the fields of database information  
data.  
Export the database in SQL format,  
to change the name of fields  
easily. Select the action:  
File> Export> Database to SQL file.  
The sale gives the name to the database  
format "txt" for this example the name is  
"Datatemp.txt" and select  
Save  
This window indicates that the information is to  
successfully exported.  
Then open the file "datatemp.txt" and file "campos.txt" containing the names  
fields such as the need OllinTS which copies the line that starts from "CREATE" and  
ends with ";" we replace the file "datatemp.txt times line starting at  
"CREATE" and ending with "." At the end save the file "datatemp.txt."  
To import the database correction,  
select from the menu SQLite Data Browser:  
File> Import> Database from SQL file.  
Through this window, select the file  
modified "datatemp.txt", and select the  
"Open."  
This window only appears when you open another database for which is selected  
option "YES" to save the information into a new file.  
The new file is given the name "data.db" and  
that the name by which the call OllinTS  
container file database.  
This window confirms the creation of the database  
Full data correctly.  
At the end, I could check that the database is  
complete and without error in the tab "Browse  
Data "  
The new database must be copied to the Database folder that is inside the folder  
OllinTS.  
for the operating system Windows XP is C: \ Python24 \ OllinTS \ DataBase  
Appendix C: Installation Procedure  
Windows XP  
To install Windows OllinTS will use a modified version of Python (Python  
Enthought Edition) which includes all the libraries necessary to run OllinTS, this version  
can be downloaded from the website http://code.enthought.com/enthon/. We will describe the  
process to install Python and OllinTS.  
Run the installation program with Python  
the name "enthonpython2.41.0.0."  
You select the installation direction, it  
leave it as it is set (C: \ Python24)  
Select "Next"  
In this window you can select the components  
Python is installed, you select all  
boxes. Select "Next"  
This sale will select the group where  
create shortcuts, we recommend using  
the default. Select "Next"  
This window lists the options  
selected before installation.  
Select "Next"  
This window confirms that Python has  
installed.  
Finally, restart the computer to  
complete the installation.  
After installation of Python, it proceeds to copy the folder to OllinTS folder  
Python, which has the path C: \ Python24 \. Now you can run OllinTS.  
Nomenclature OllinTS  
Table 5. Nomenclature OllinTS  
Variable Units Specifications  
T ° K temperature  
P Pressure Kpa  
FracVap - fraction vaporized  
xf - fas liquid mole fraction  
f - gas phase mole fraction  
x - mole fraction of the mixture  
Zl - liquid phase compressibility factor  
Zv - gas phase compressibility factor  
CoefPureVap - fugacity coefficient of gas-phase pure compounds  
Numeric array  
CoefMixVap - fugacity coefficient of the compounds in gas-phase mixture  
Numeric array  
CoefMixVLiq - fugacity coefficient of the compounds in a mixture phase  
liquid-numeric Agreement  
M3 VVI  
Kgmol  
Volume of gas-phase pure compounds numeric Agreement  
M3 VLI  
Kgmol  
Volume of liquid phase-pure compounds numeric Agreement  
M3 vv  
Kgmol  
Gas phase volume  
Table 5. OllinTS nomenclature (continued)  
Variable Units Specifications  
M3 Vl  
Kgmol  
Volume of liquid phase pure compounds  
ActivityVap - Activity coefficient of gas phase pure compounds -  
Numeric array  
ActivityLiq - Activity coefficient of pure compounds liquid phase -  
Numeric array  
Vapor Pressure KPa PreVap - Fix numeric  
Ki - Coefficient of numerical-Array  
AlphaT - Built-in temperature  
Tr - low temperature  
fw - Role of the acentric factor and reduced temperature - Settlement  
numeric  
a - Factor "a" to the cubic equation of state  
A - Factor A for the cubic equation of state  
B - Factor B for the cubic equation of state  
DADT - First derivative of the factor "a" to the cubic equation of state  
d2adT2 - Second derivative of the factor "a" for the cubic equation  
state  
MolWt Kg  
Kgmol  
Average molecular mass of the mixture  
MolWt\_l Kg  
Kgmol  
Average molecular mass of the liquid phase  
MolWt\_v Kg  
Kgmol  
Average molecular mass of the vapor phase  
LiqDen Kg  
M3  
Average net density  
KJ Cp\_v  
Kgmol K  
Heat capacity at constant pressure vapor-phase Agreement  
numeric  
KJ Cv\_v  
Kgmol K  
Heat capacity at constant volume vapor-phase Agreement  
numeric  
Table 5. OllinTS nomenclature (continued)  
Variable Units Specifications  
KJ HF  
Kgmol  
Standard power training  
KJ GF  
Kgmol  
Gibbs free energy of formation  
KJ G  
Kgmol  
Gibbs free energy of mixing  
KJ H  
Kgmol  
Enthalpy of mixing  
KJ S  
Kgmol  
Entropy of mixing  
KJ U  
Kgmol  
Internal energy mix  
Afree KJ  
Kgmol  
Helmholtz free energy  
KJ G\_v  
Kgmol  
Gibbs free energy of gas phase  
KJ G\_L  
Kgmol  
Gibbs free energy of liquid phase  
KJ H\_v  
Kgmol  
Enthalpy of gas phase  
KJ H\_l  
Kgmol  
Free enthalpy of the liquid phase  
KJ S\_v  
Kgmol K  
Entropy of the gas phase  
KJ S\_l  
Kgmol K  
Free entropy of the liquid phase  
KJ U\_v  
Kgmol  
Internal energy of the gas phase  
KJ U\_l  
Kgmol  
Internal energy of the liquid phase  
KJ AFree\_v  
Kgmol  
Helmholtz free energy of the gas phase  
Variable Units Specifications  
KJ AFree\_l  
Kgmol  
Helmholtz free energy of the liquid phase  
Table 6. Nomenclature Database  
Name OllinTS  
Ollin.DataBase.Sy  
sData  
Name on  
Base  
data  
Description Units  
ZC ZC critical compressibility factor -  
OMEGA OMEGA Pitzer acentric factor -  
Liquid density LIQDEN LIQDEN  
TDEN TDEN temperature liquid density K  
DIM DIM Momentum dipole -  
Coefficient CP\_A CP\_A gas heat capacity  
ideal A  
KJ  
Kgmol K  
Coefficient CP\_B CP\_B gas heat capacity  
ideal B  
KJ  
Kgmol K  
Coefficient CP\_C CP\_C gas heat capacity  
ideal C  
KJ  
Kgmol K  
Coefficient CP\_D CP\_D gas heat capacity  
ideal D  
KJ  
Kgmol K  
VISC\_LIQ\_B VL\_B liquid viscosity coefficient Cp B  
VISC\_LIQ\_C VL\_C liquid viscosity coefficient Cp C  
Energy DEL\_HF DELHF standard training  
KJ  
Kgmol  
ANT\_A  
ANTOINE\_VP  
\_A  
A coefficient for the equation of  
Antoine  
P = mmHg  
T = ° K  
Table 6. Nomenclature Database (continued)  
Name OllinTS  
Ollin.DataBase.Sy  
sData  
Name on  
Base  
data  
Description Units  
ANT\_B  
ANTOINE\_VP  
\_B  
B coefficient for the equation  
Antoine  
P = mmHg  
T = ° K  
ANT\_C  
ANTOINE\_VP  
\_C  
C ratio for the equation  
Antoine  
P = mmHg  
T = ° K  
TMAX ANT\_MAX  
Maximum temperature equation  
Antoine K  
TMIN ANT\_MIN  
Minimum temperature equation  
Antoine K  
HAR\_A  
HARLACHER\_  
VP\_A  
A coefficient for the equation of  
Harlacher  
P = mmHg  
T = ° K  
HAR\_B  
HARLACHER\_  
VP\_B  
B coefficient for the equation  
Harlacher  
P = mmHg  
T = ° K  
HAR\_C  
HARLACHER\_  
VP\_C  
C ratio for the equation  
Harlacher  
P = mmHg  
T = ° K  
HAR\_D  
HARLACHAR\_  
VP\_D  
Coefficient D to the equation  
Harlacher  
P = mmHg  
T = ° K  
HV HV standard heat of vaporization  
KJ  
Kgmol  
Constant RK\_ac RK\_A ac to the case Redlich-Kwong -  
RK\_b RK\_B constant b for the case Redlich-Kwong -  
Table 6. Nomenclature Database (continued)

Listen

Read phonetically

Dictionary - [View detailed dictionary](http://www.google.com/dictionary?source=translation&hl=en&q=Comandos%20de%20OllinTS%20%20OllinTS%20se%20ha%20programado%20para%20resolver%20los%20casos%20donde%20obligatoriamente%20se%20especifique%20la%20fracción%20%20mol%20de%20la%20mezcla%20de%20los%20cuales%20se%20derivan%20los%20siguientes%20casos:%20%201.%20PresiónTemperatura%20%202.%20Presión-Entalpía%20%203.%20Presión-Fracción%20Vapor%20%204.%20TemperaturaFracción%20%20Vapor%20%205.%20Temperatura-Entalpía%20%20Los%20comandos%20que%20a%20continuación%20se%20describen%20deben%20aplicarse%20desde%20un%20objeto,%20puede%20ser%20el%20servidor%20%20de%20propiedades%20o%20a%20un%20caso%20termodinámico.%20La%20sintaxis%20para%20estos%20comandos%20es%20que%20estos%20deberán%20estar%20%20escritos%20después%20de%20un%20punto%20que%20los%20separa%20del%20objeto%20al%20que%20apuntan%20(%20?%20Objeto?%20.%20?%20Comando?%20).%20%20Comandos%20del%20administrador%20%20En%20esta%20sección%20el%20objeto%20al%20cual%20se%20aplican%20los%20comandos%20es%20?Ollin?%20(%20Ollin.Solve(%20)%20),%20que%20es%20el%20servidor%20%20de%20propiedades.%20%20●%20AddModel(A,%20B,%20C):%20Agrega%20un%20modelo%20termodinámico%20al%20administrador%20y%20regresa%20la%20%20dirección%20del%20modelo%20creado%20que%20puede%20se%20puede%20guardar%20como%20variable%20para%20acceder%20más%20%20rápidamente%20al%20modelo%20creado,%20siguiendo%20estas%20especificaciones:%20%20A:%20Especifica%20el%20nombre%20con%20el%20cual%20se%20identifica%20al%20modelo%20termodinámico%20y%20con%20el%20cual%20%20se%20almacena%20en%20el%20administrador,%20este%20nombre%20debe%20ser%20una%20cadena%20de%20caracteres.%20%20B:%20Especifica%20la%20ecuación%20de%20estado%20a%20usar%20en%20el%20modelo%20termodinámico,%20las%20opciones%20son%20%20las%20siguientes.%20%20RKS%20=%20RedlichKwongSimplicado%20%20RK%20=%20RedlichKwong%20%20SRK%20=%20SoaveRedlichKwong%20%20PR%20=%20PengRobinson%20%20Cuando%20se%20omite%20este%20argumento%20el%20servidor%20de%20propiedades%20usa%20el%20modelo%20RK%20por%20%20default%20%20C:%20Designa%20la%20ecuación%20mediante%20la%20cual%25)