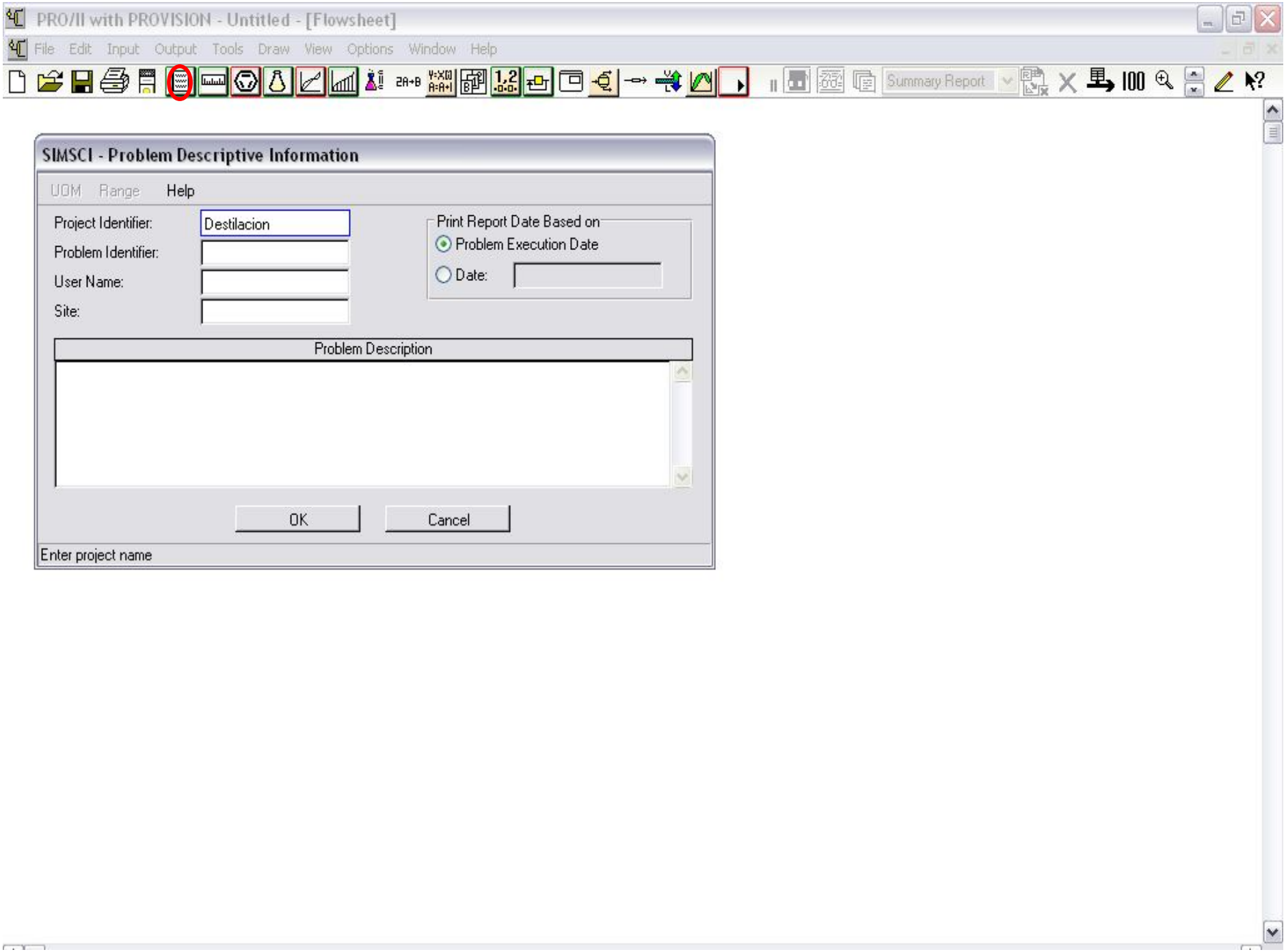
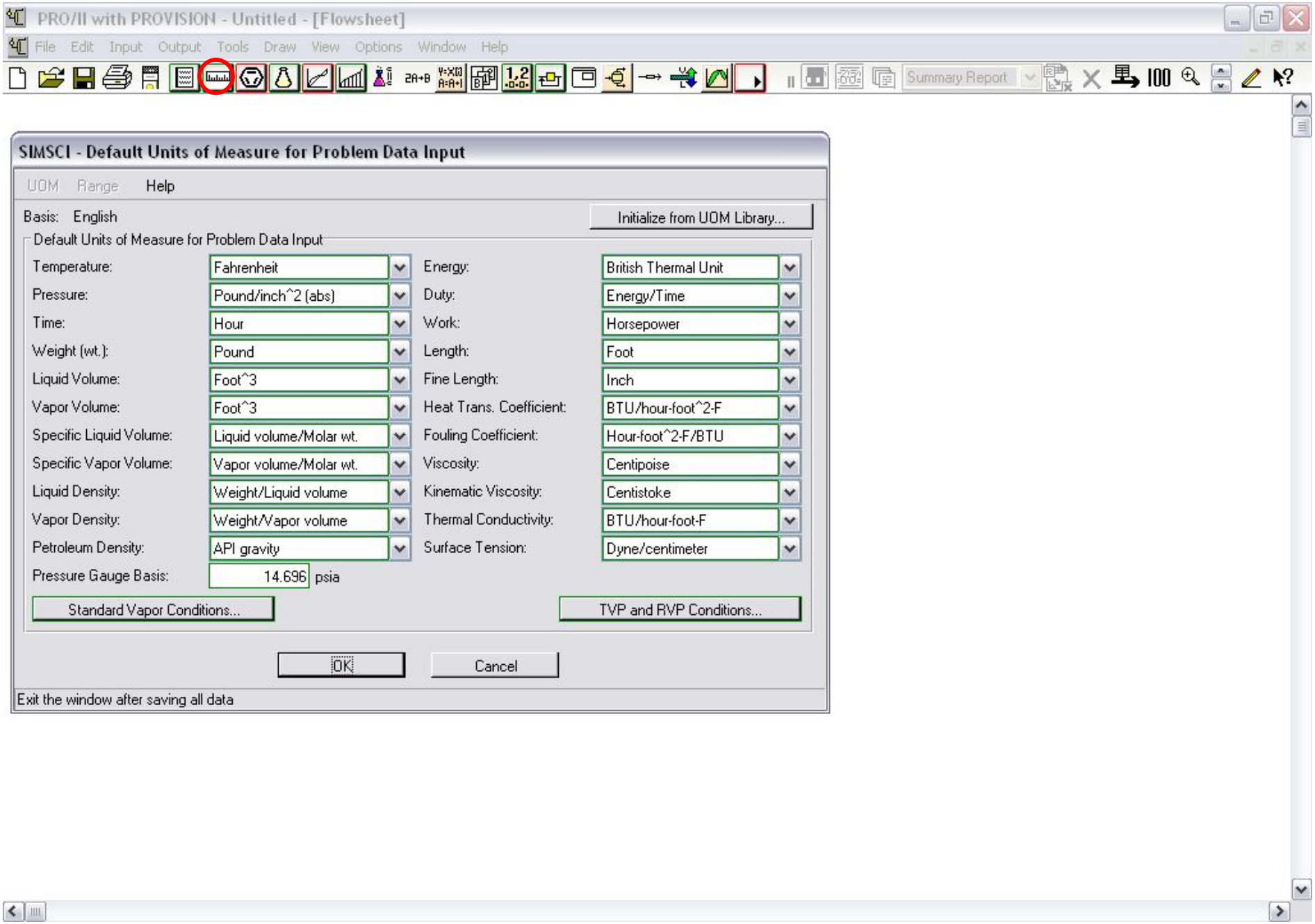
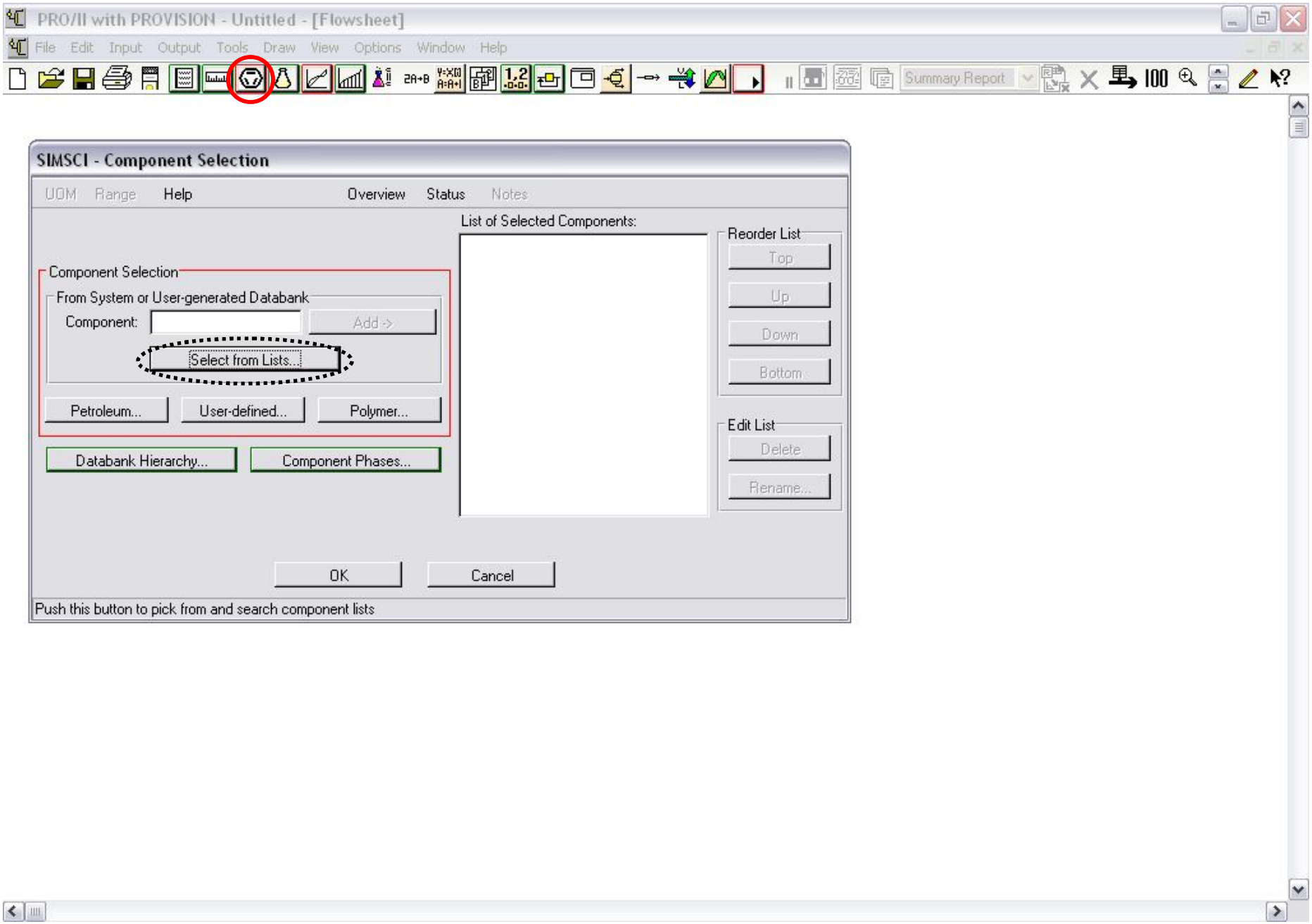
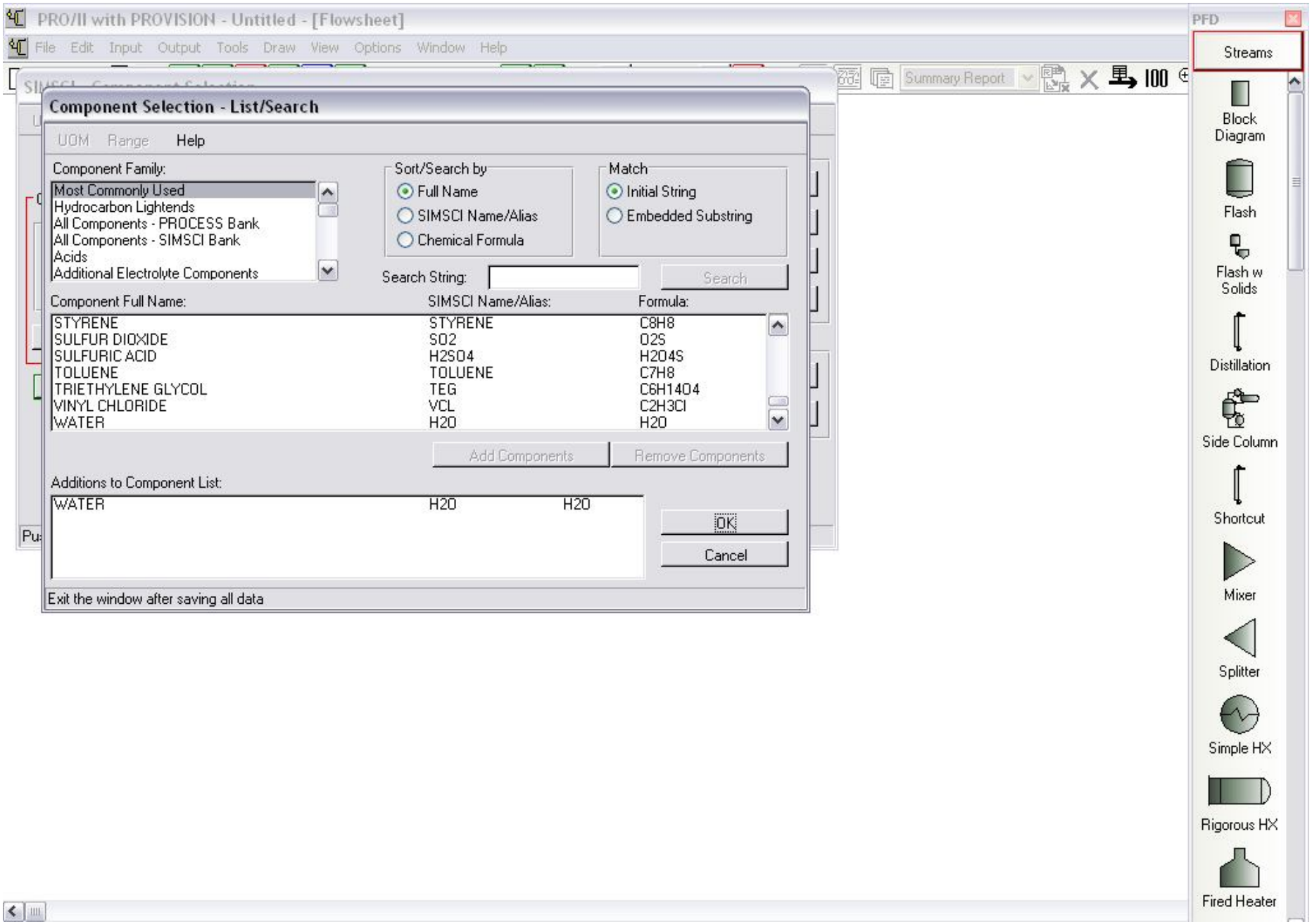
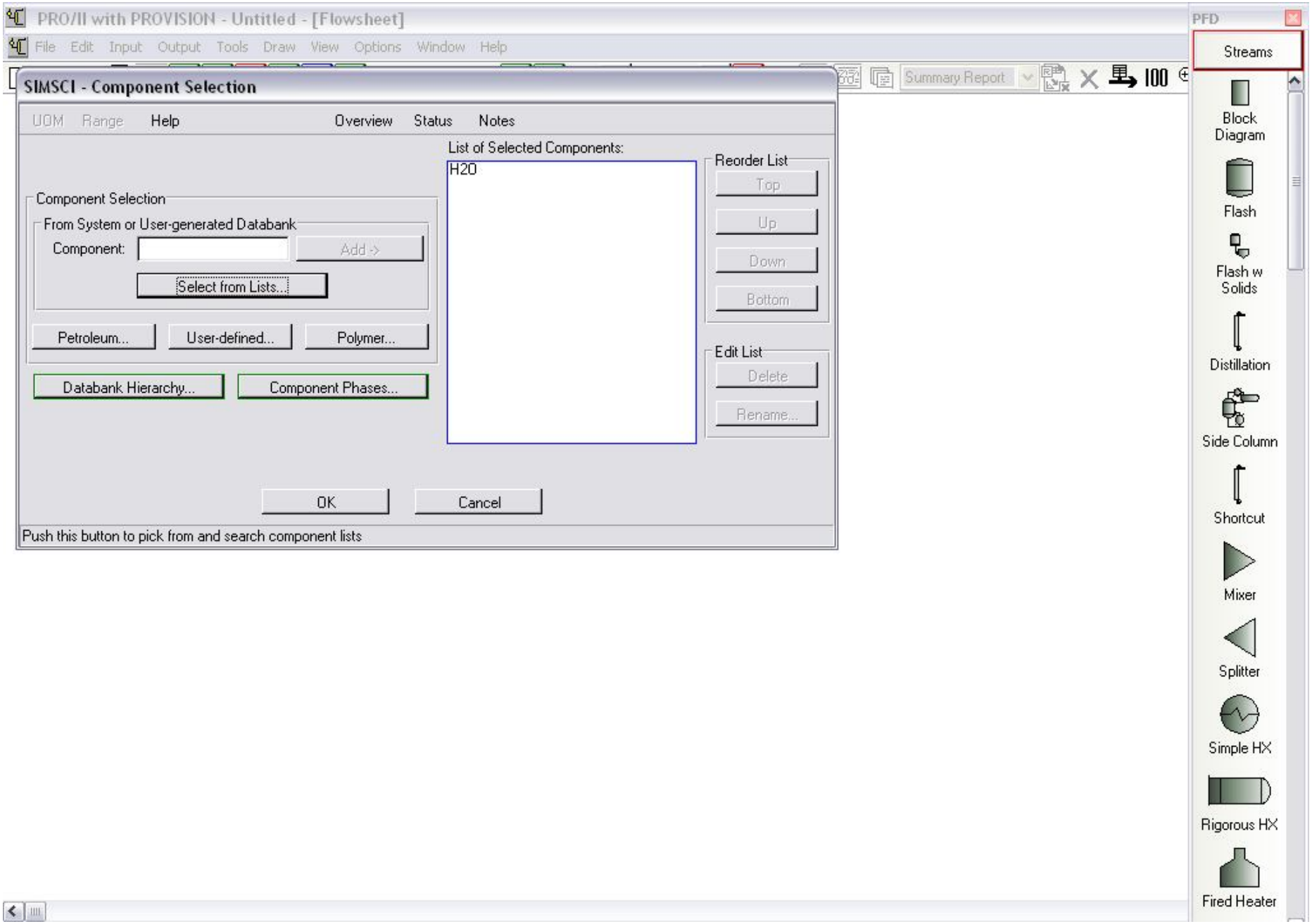
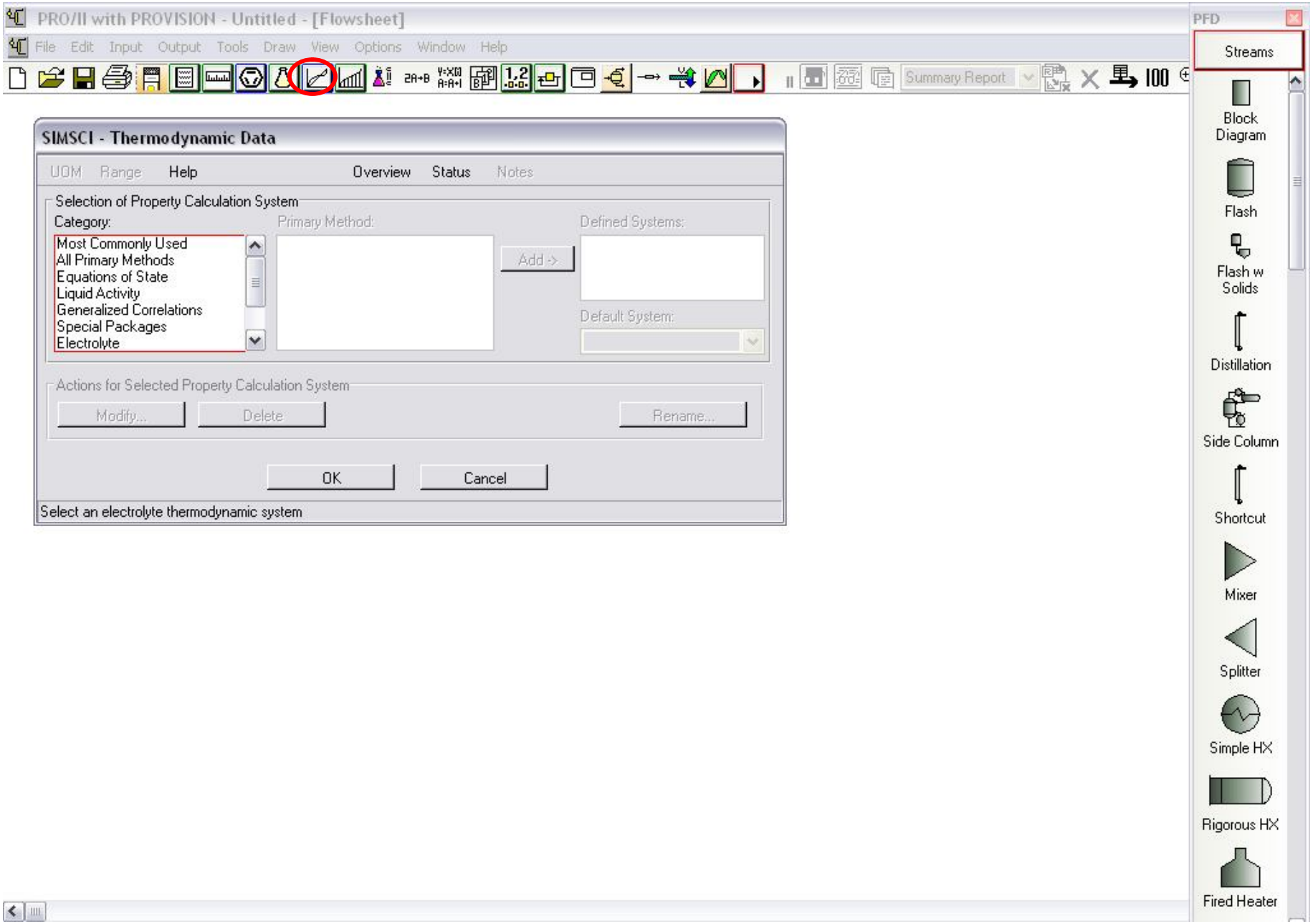

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
SIMSCI - Problem Descriptive Information
UOM Range Help
Project Identifier:
Destilacion
Problem Identifier:
User Name:
Site:
Print Report Date Based on
Problem Execution Date
Date:
Problem Description
OK
Cancel
Enter project name

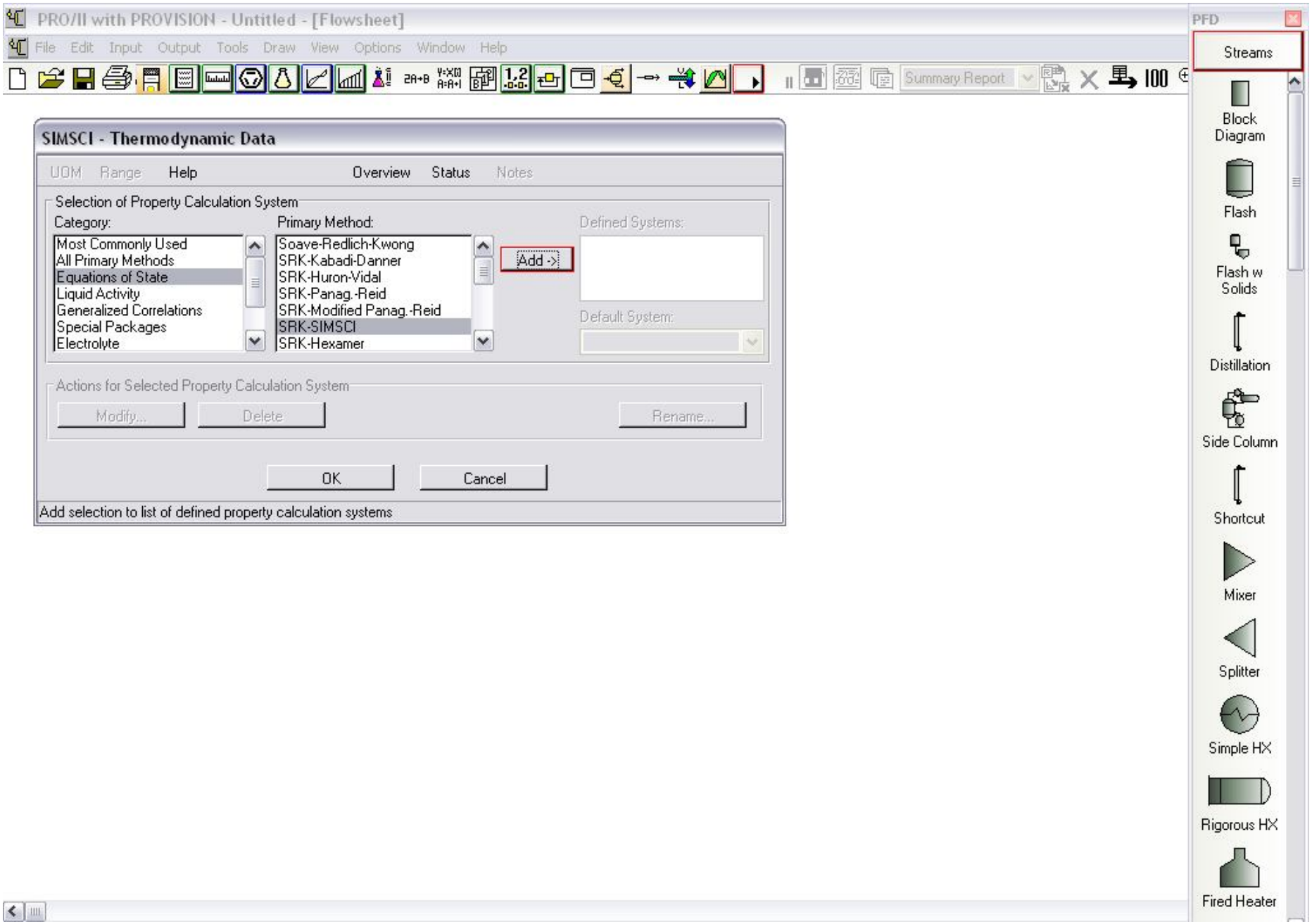

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
SIMSCI - Default Units of Measure for Problem Data Input
UOM Range Help
Basis: English
Initialize from UOM Library...
Default Units of Measure for Problem Data Input
Temperature: Fahrenheit
Pressure: Pound/inch^2 (abs)
Time: Hour
Weight (wt.): Pound
Liquid Volume: Foot^3
Vapor Volume: Foot^3
Specific Liquid Volume: Liquid volume/Molar wt.
Specific Vapor Volume: Vapor volume/Molar wt.
Liquid Density: Weight/Liquid volume
Vapor Density: Weight/Vapor volume
Petroleum Density: API gravity
Pressure Gauge Basis: 14.696 psia
Energy: British Thermal Unit
Duty: Energy/Time
Work: Horsepower
Length: Foot
Fine Length: Inch
Heat Trans. Coefficient: BTU/hour-foot^2-F
Fouling Coefficient: Hour-foot^2-F/BTU
Viscosity: Centipoise
Kinematic Viscosity: Centistoke
Thermal Conductivity: BTU/hour-foot-F
Surface Tension: Dyne/centimeter
Standard Vapor Conditions...
TVP and RVP Conditions...
OK
Cancel
Exit the window after saving all data

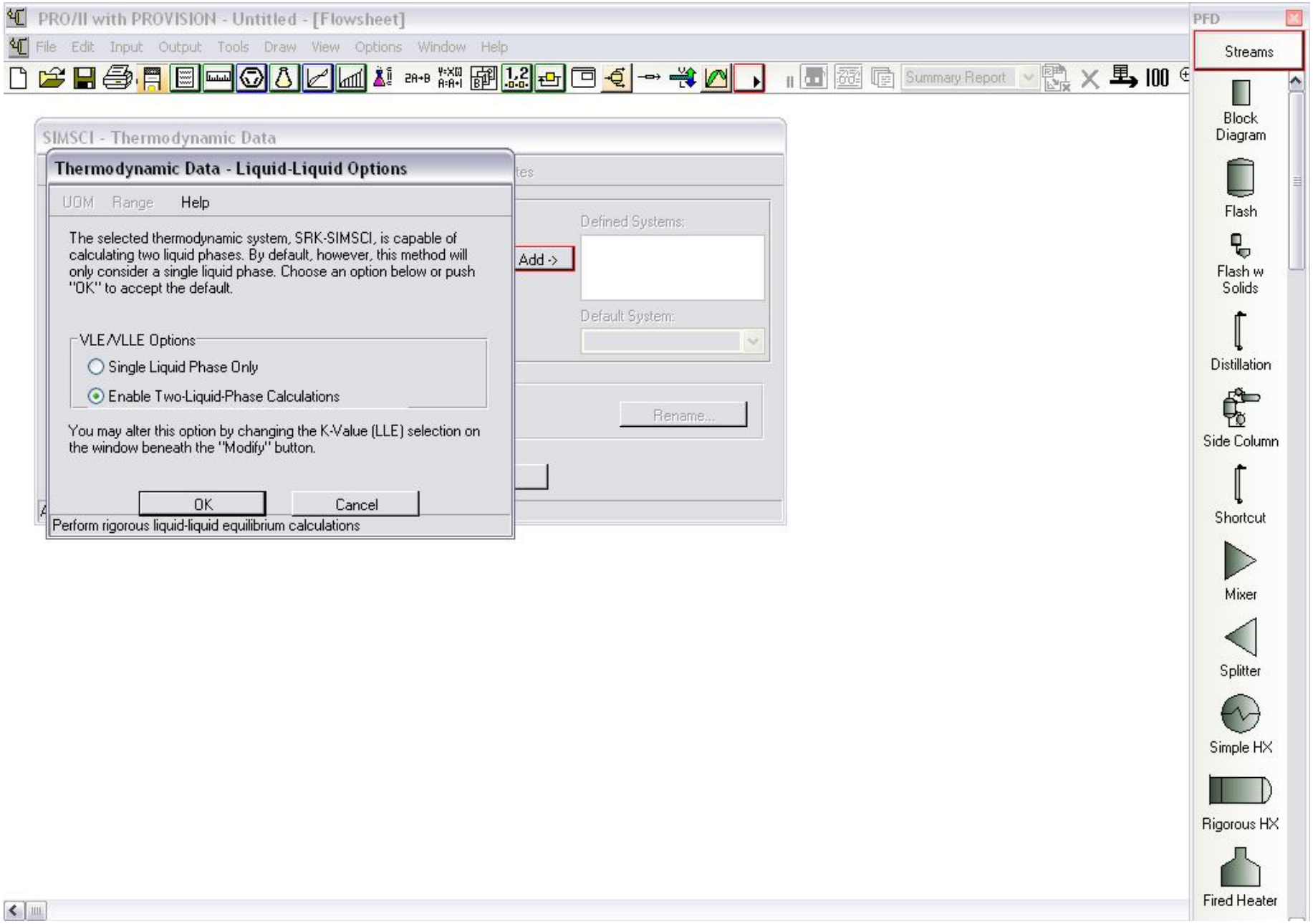

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
SIMSCI - Component Selection
UOM Range Help Overview Status Notes
List of Selected Components:
Reorder List
Top
Up
Down
Bottom
Component Selection
From System or User-generated Databank
Component:
Add ->
Select from Lists...
Petroleum...
User-defined...
Polymer...
Edit List
Delete
Rename...
Databank Hierarchy...
Component Phases...
OK
Cancel
Push this button to pick from and search component lists

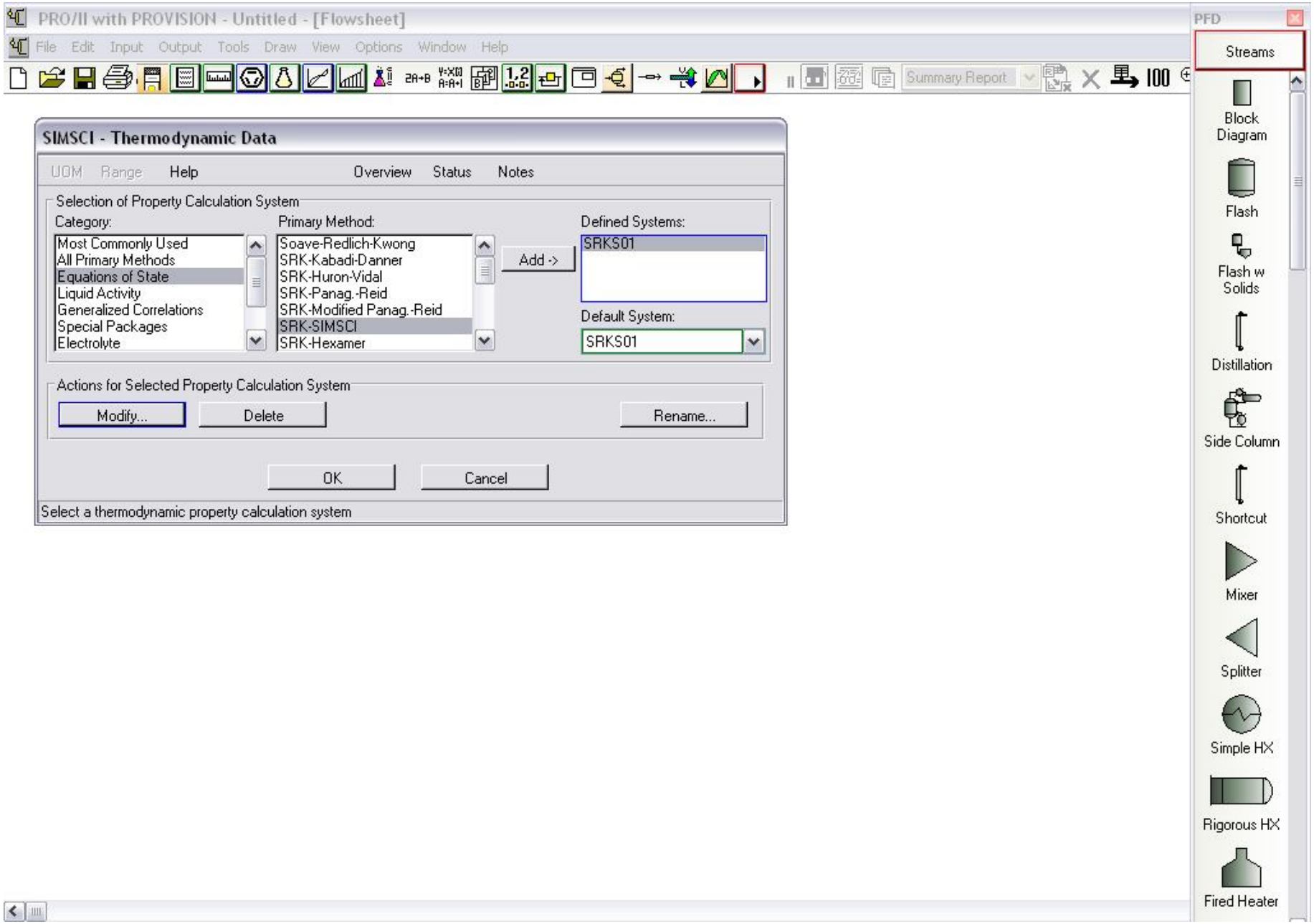

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Component Selection - List/Search
UOM Range Help
Component Family:
Most Commonly Used
Hydrocarbon Lightends
All Components - PROCESS Bank
All Components - SIMSCI Bank
Acids
Additional Electrolyte Components
Sort/Search by
Full Name
SIMSCI Name/Alias
Chemical Formula
Match
Initial String
Embedded Substring
Search String:
Search
Component Full Name:
SIMSCI Name/Alias:
Formula:
STYRENE STYRENE C8H8
SULFUR DIOXIDE SO2 O2S
SULFURIC ACID H2SO4 H2O4S
TOLUENE TOLUENE C7H8
TRIETHYLENE GLYCOL TEG C6H14O4
VINYL CHLORIDE VCL C2H3Cl
WATER H2O H2O
Add Components
Remove Components
Additions to Component List:
WATER H2O H2O
OK
Cancel
Exit the window after saving all data

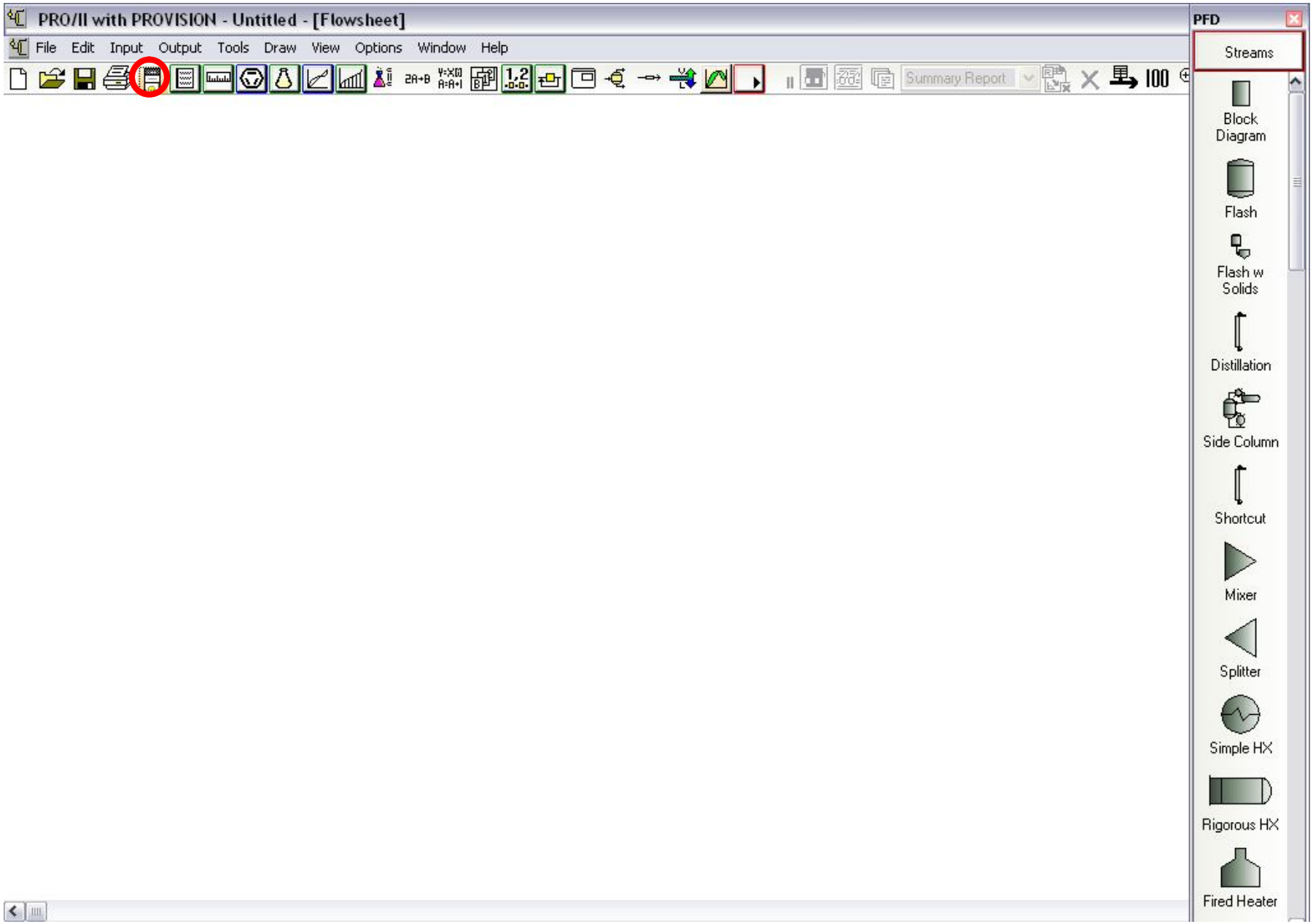

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
SIMSCI - Component Selection
UOM Range Help
Overview Status Notes
List of Selected Components:
H2O
Reorder List
Top
Up
Down
Bottom
Component Selection
From System or User-generated Databank
Component:
Add ->
Select from Lists...
Petroleum...
User-defined...
Polymer...
Edit List
Delete
Rename...
Databank Hierarchy...
Component Phases...
OK
Cancel
Push this button to pick from and search component lists

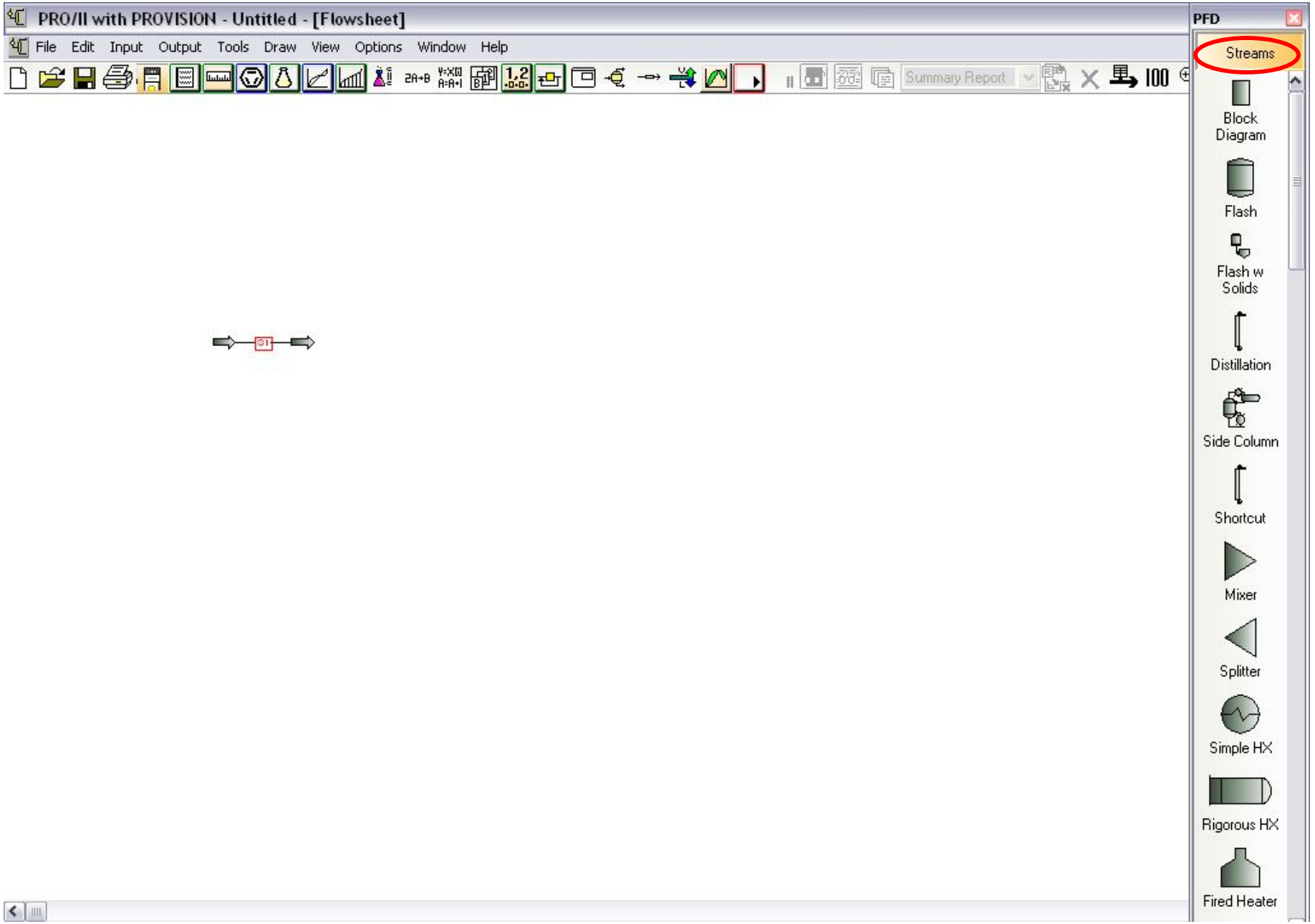

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
SIMSCI - Thermodynamic Data
UOM Range Help
Overview Status Notes
Selection of Property Calculation System
Category:
Most Commonly Used
All Primary Methods
Equations of State
Liquid Activity
Generalized Correlations
Special Packages
Electrolyte
Primary Method:
Add ->
Defined Systems:
Default System:
Actions for Selected Property Calculation System
Modify...
Delete
Rename...
OK
Cancel
Select an electrolyte thermodynamic system

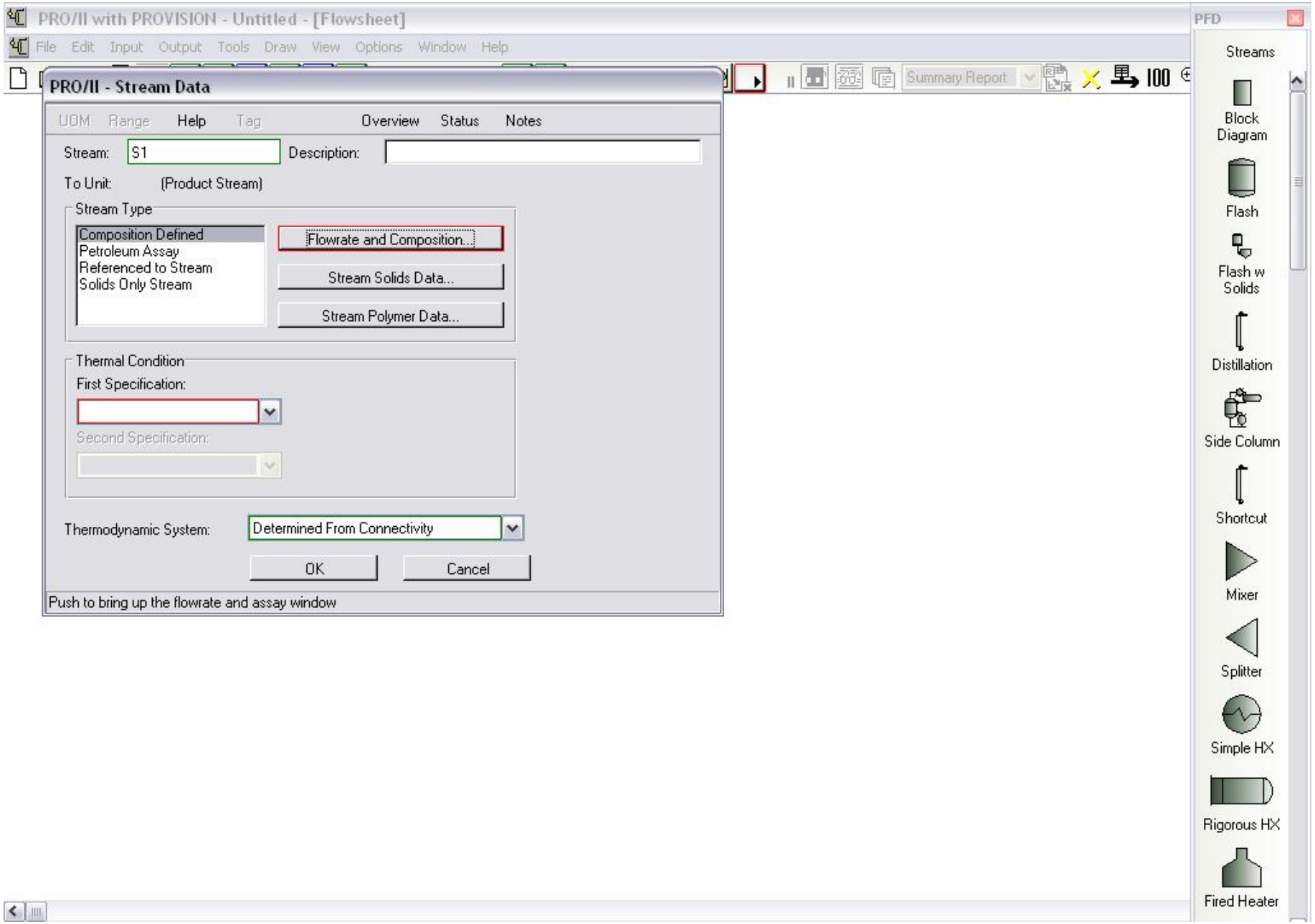

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
SIMSCI - Thermodynamic Data
UOM Range Help Overview Status Notes
Selection of Property Calculation System
Category:
Most Commonly Used
All Primary Methods
Equations of State
Liquid Activity
Generalized Correlations
Special Packages
Electrolyte
Primary Method:
Soave-Redlich-Kwong
SRK-Kabadi-Danner
SRK-Huron-Vidal
SRK-Panag.-Reid
SRK-Modified Panag.-Reid
SRK-SIMSCI
SRK-Hexamer
Add ->
Defined Systems:
Default System:
Actions for Selected Property Calculation System
Modify...
Delete
Rename...
OK
Cancel
Add selection to list of defined property calculation systems

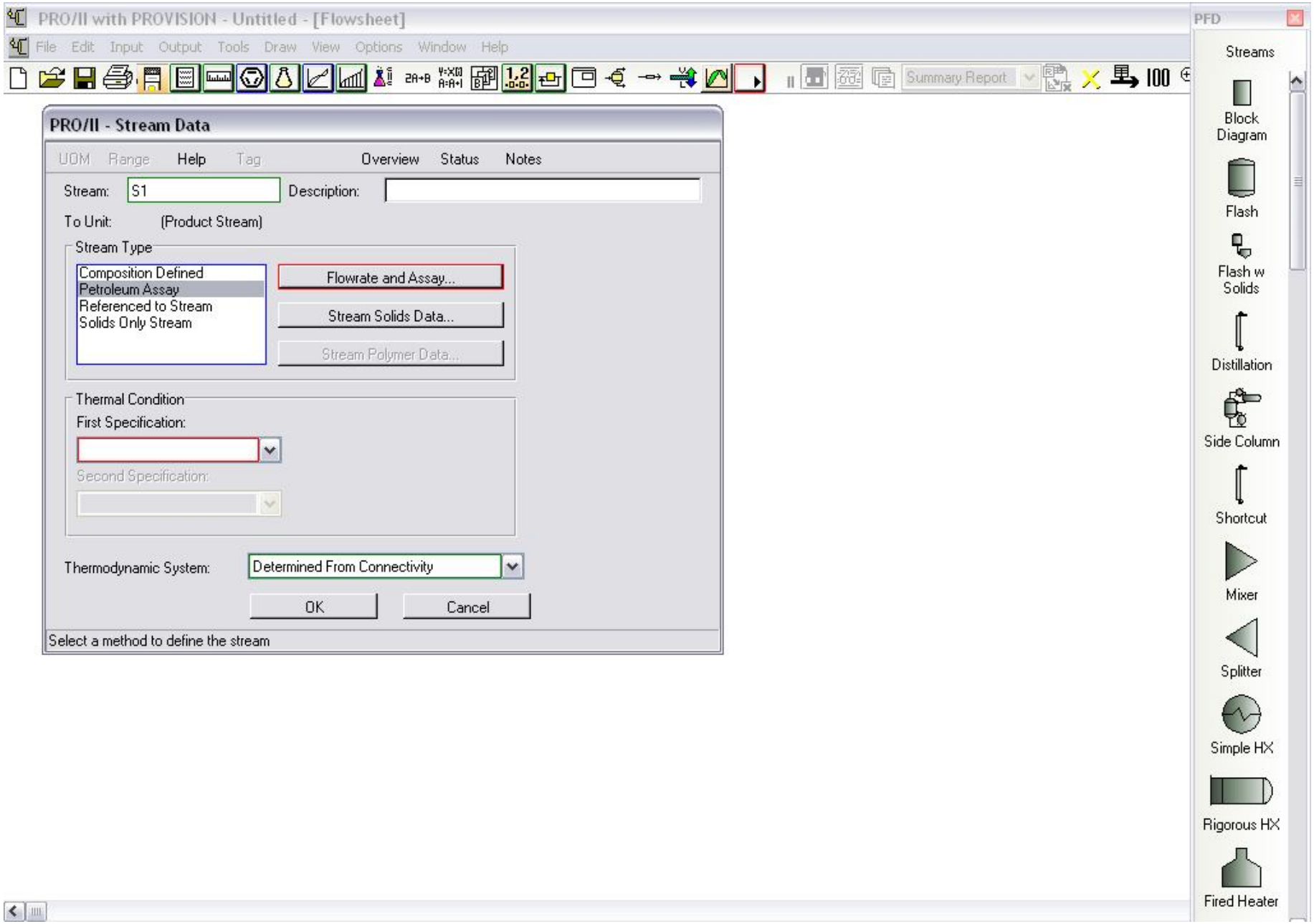

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
SIMSCI - Thermodynamic Data
Thermodynamic Data - Liquid-Liquid Options
UOM Range Help
The selected thermodynamic system, SRK-SIMSCI, is capable of calculating two liquid phases. By default, however, this method will only consider a single liquid phase. Choose an option below or push "OK" to accept the default.
VLE/VLLE Options
Single Liquid Phase Only
Enable Two-Liquid-Phase Calculations
You may alter this option by changing the K-Value (LLE) selection on the window beneath the "Modify" button.
OK
Cancel
Perform rigorous liquid-liquid equilibrium calculations
Defined Systems:
Add ->
Default System:
Rename...

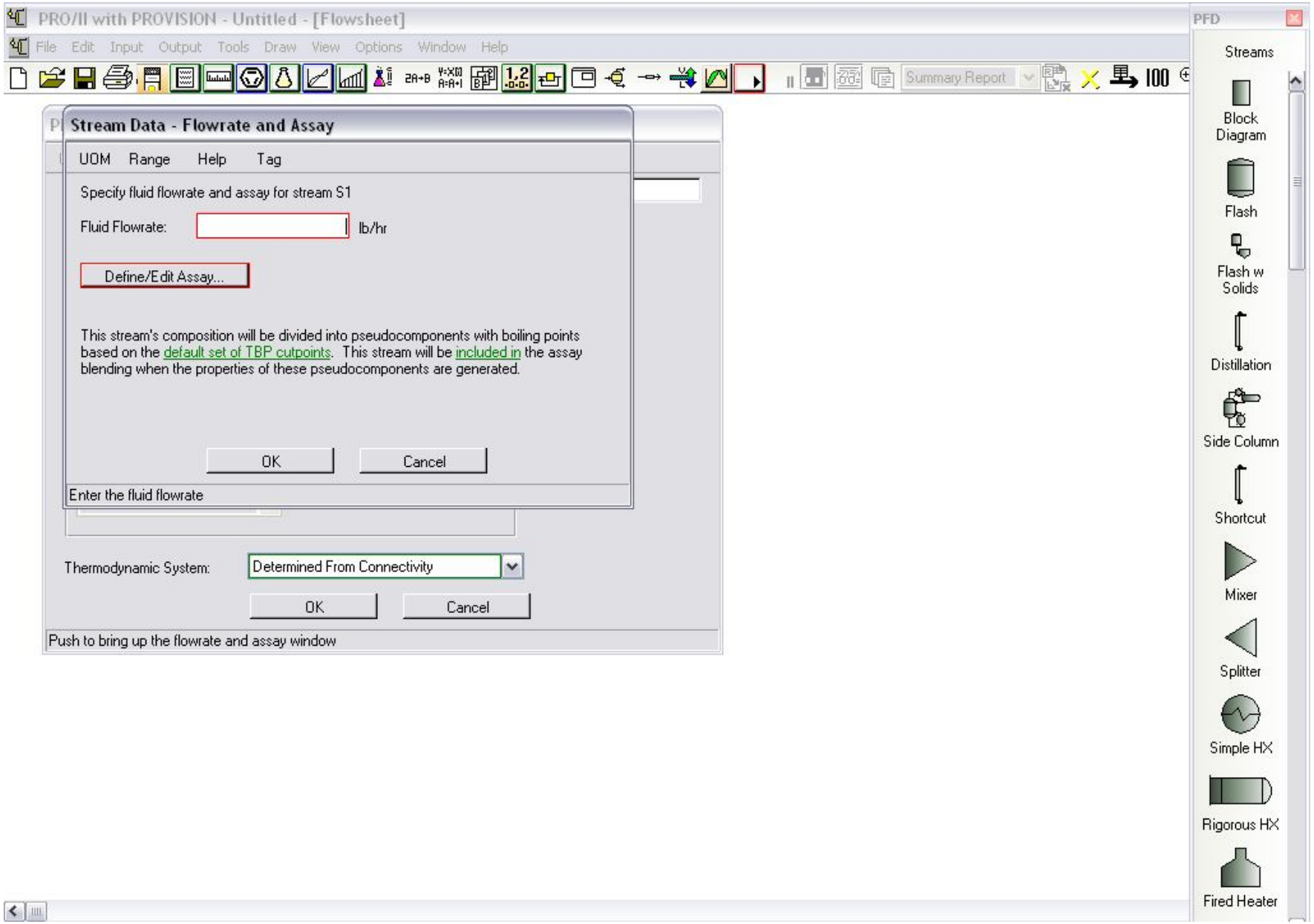

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
SIMSCI - Thermodynamic Data
UOM Range Help
Overview Status Notes
Selection of Property Calculation System
Category:
Most Commonly Used
All Primary Methods
Equations of State
Liquid Activity
Generalized Correlations
Special Packages
Electrolyte
Primary Method:
Soave-Redlich-Kwong
SRK-Kabadi-Danner
SRK-Huron-Vidal
SRK-Panag.-Reid
SRK-Modified Panag.-Reid
SRK-SIMSCI
SRK-Hexamer
Add ->
Defined Systems:
SRKS01
Default System:
SRKS01
Actions for Selected Property Calculation System
Modify...
Delete
Rename...
OK
Cancel
Select a thermodynamic property calculation system

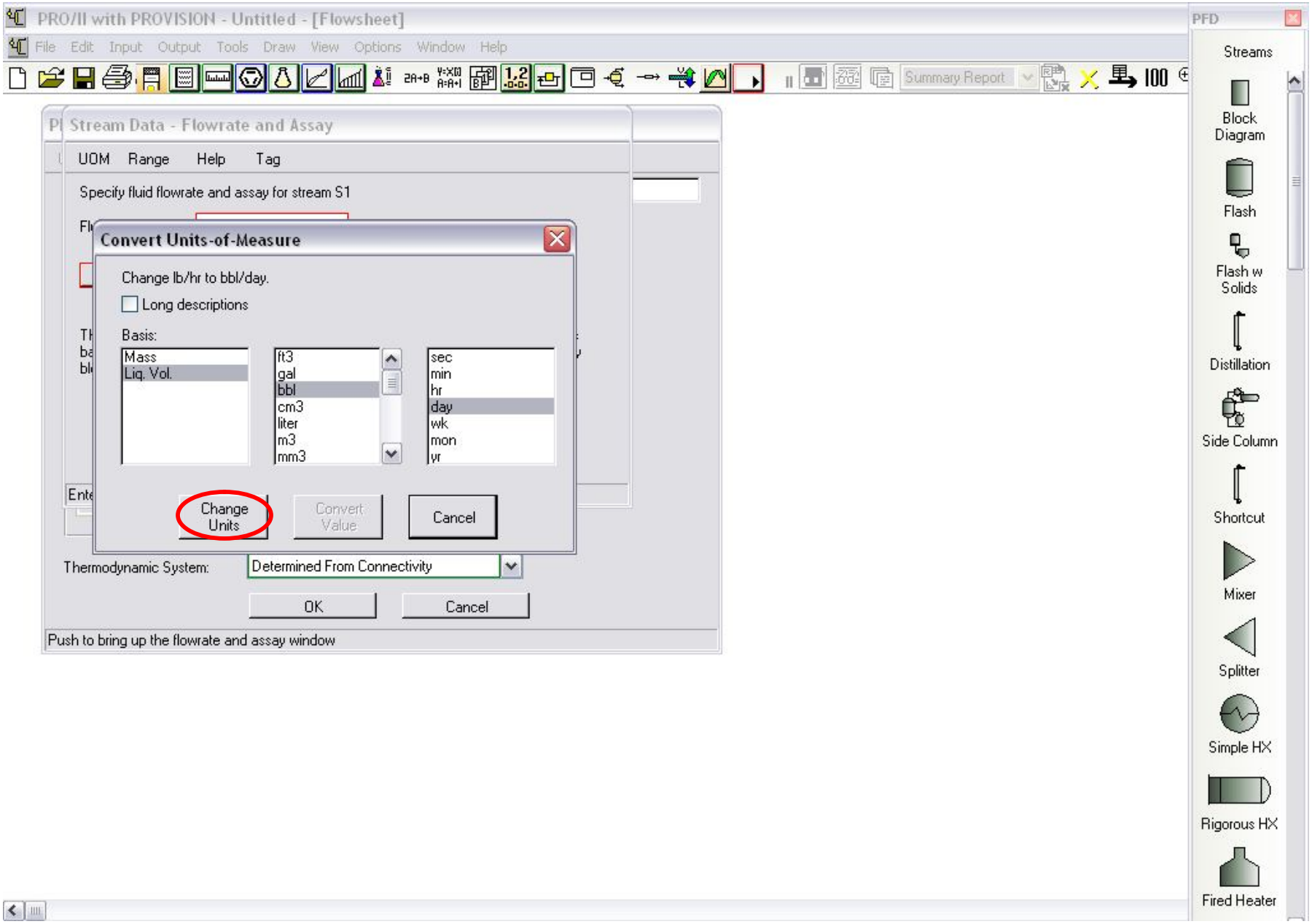

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

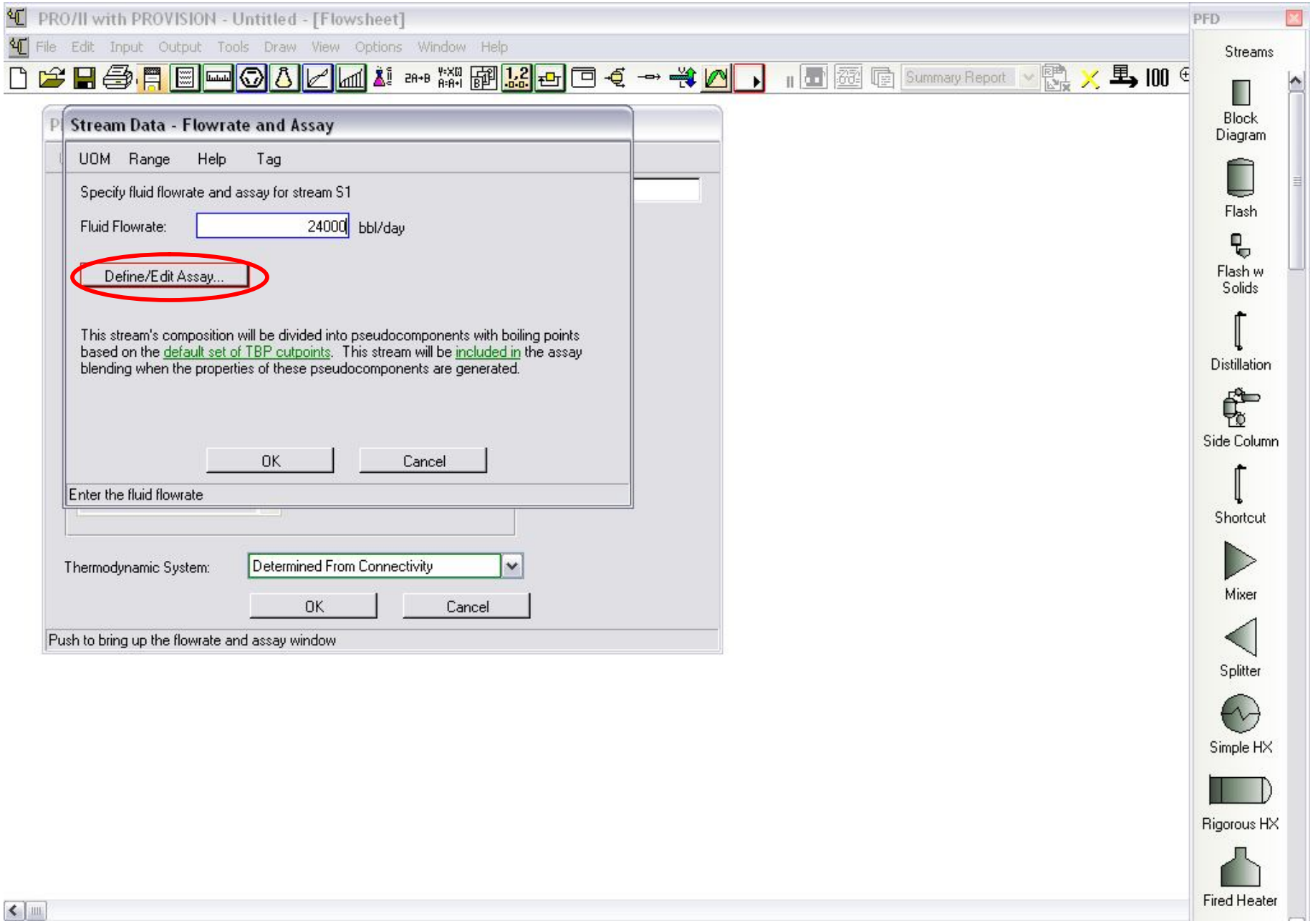

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

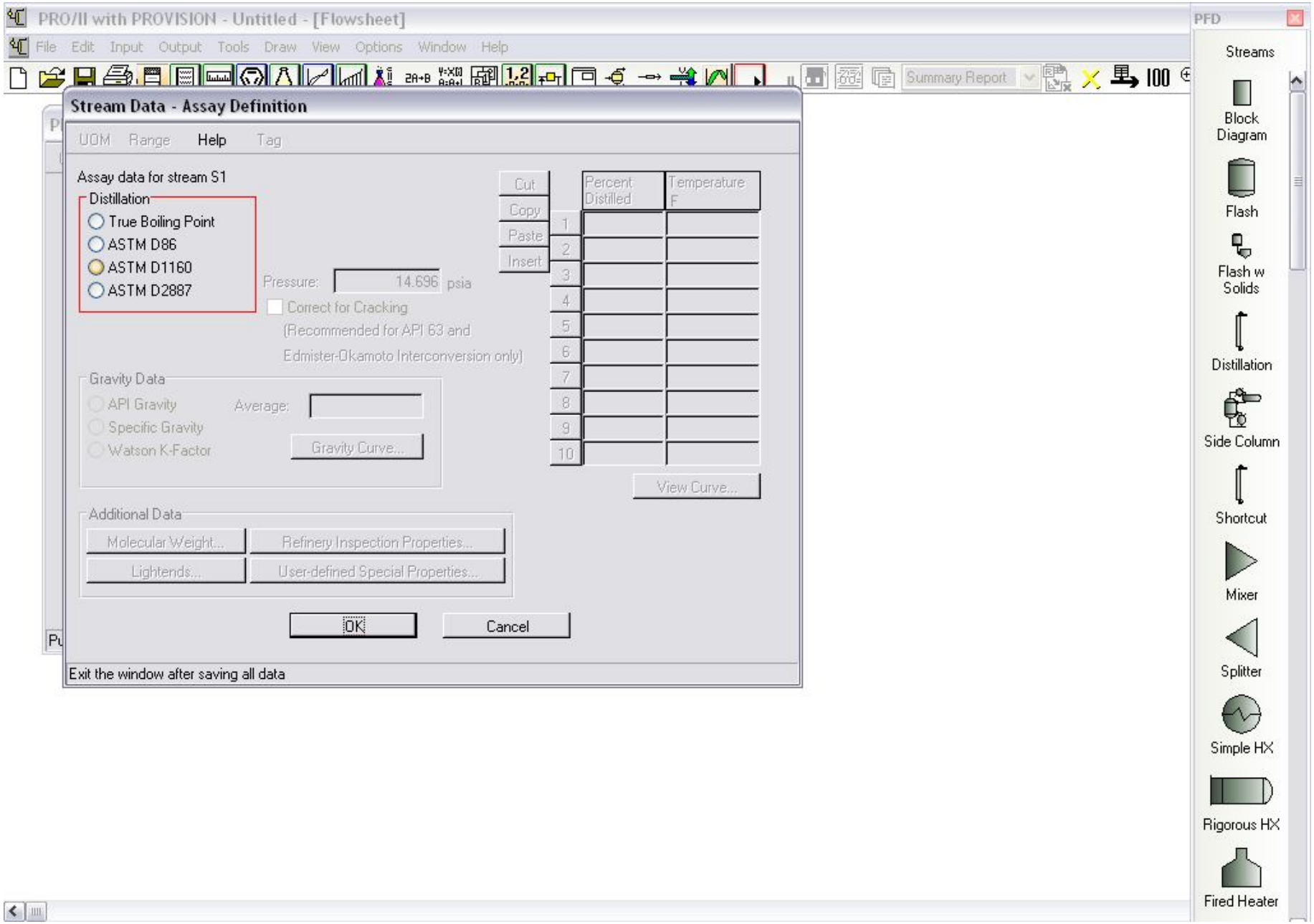

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S1
Description:
To Unit: (Product Stream)
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Composition...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Second Specification:
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Push to bring up the flowrate and assay window
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

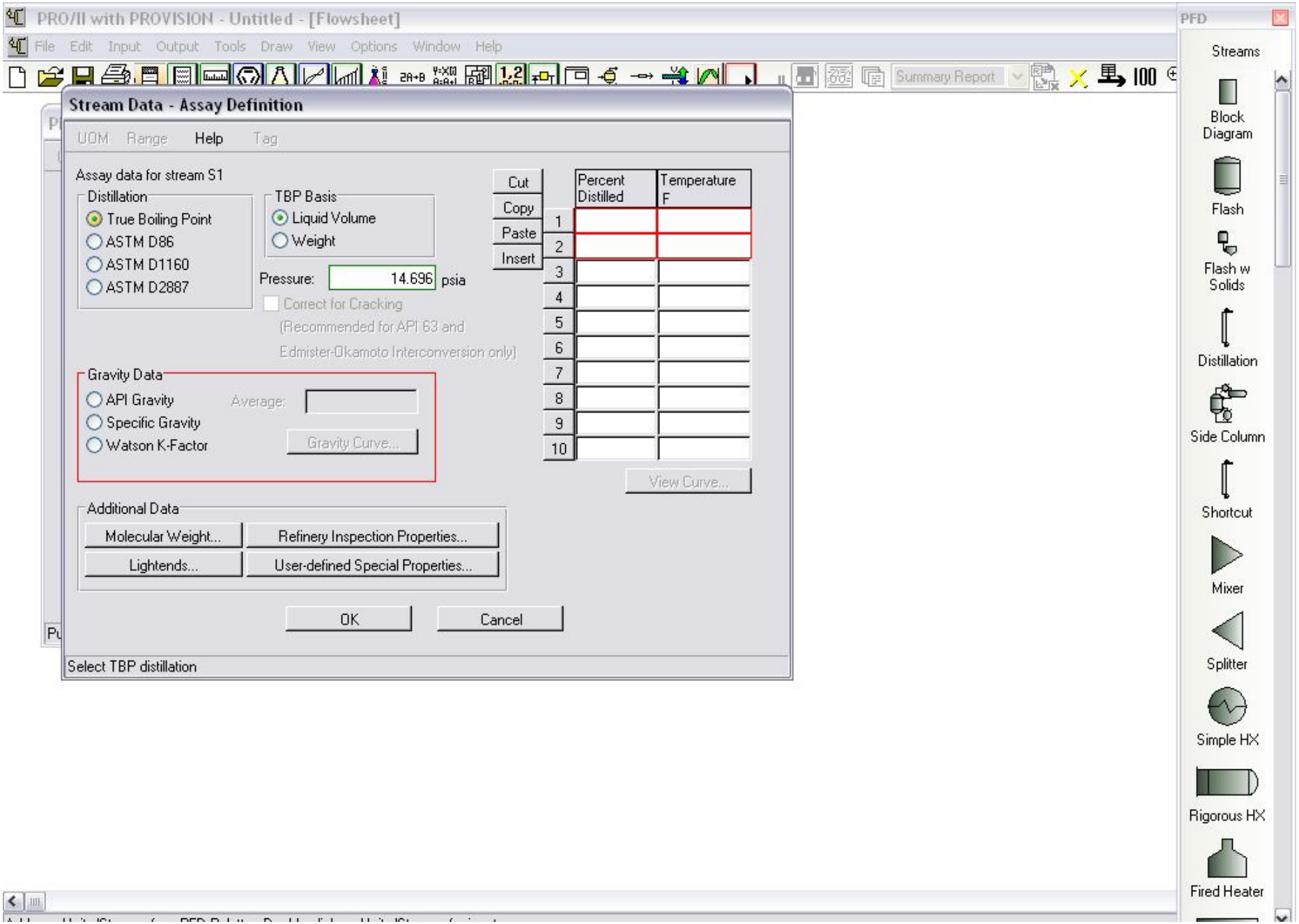

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S1
Description:
To Unit: (Product Stream)
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Assay...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Second Specification:
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Select a method to define the stream

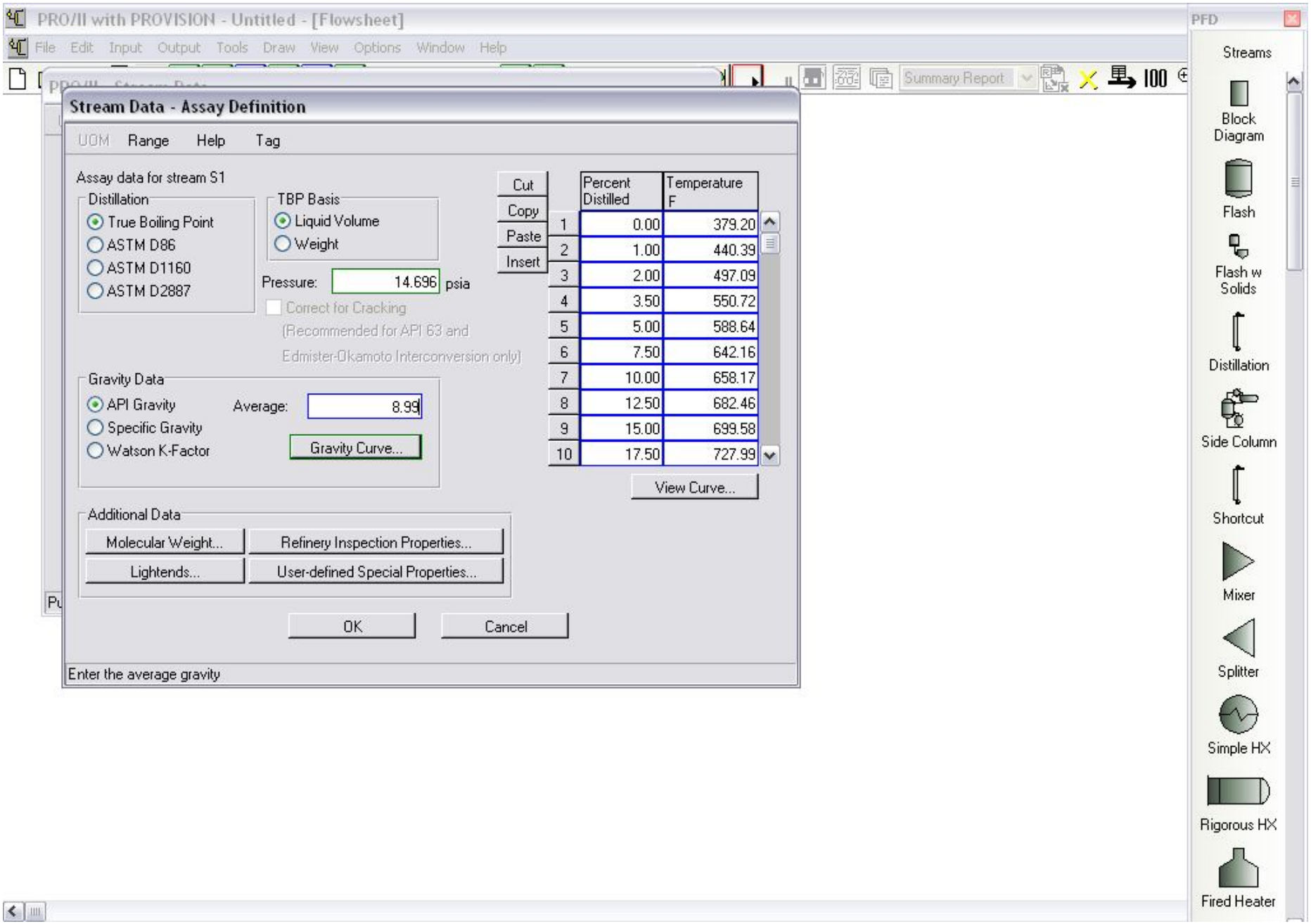

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Stream Data - Flowrate and Assay
UOM Range Help Tag
Specify fluid flowrate and assay for stream S1
Fluid Flowrate:
lb/hr
Define/Edit Assay...
This stream's composition will be divided into pseudocomponents with boiling points based on the default set of TBP cutpoints. This stream will be included in the assay blending when the properties of these pseudocomponents are generated.
OK
Cancel
Enter the fluid flowrate
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Push to bring up the flowrate and assay window

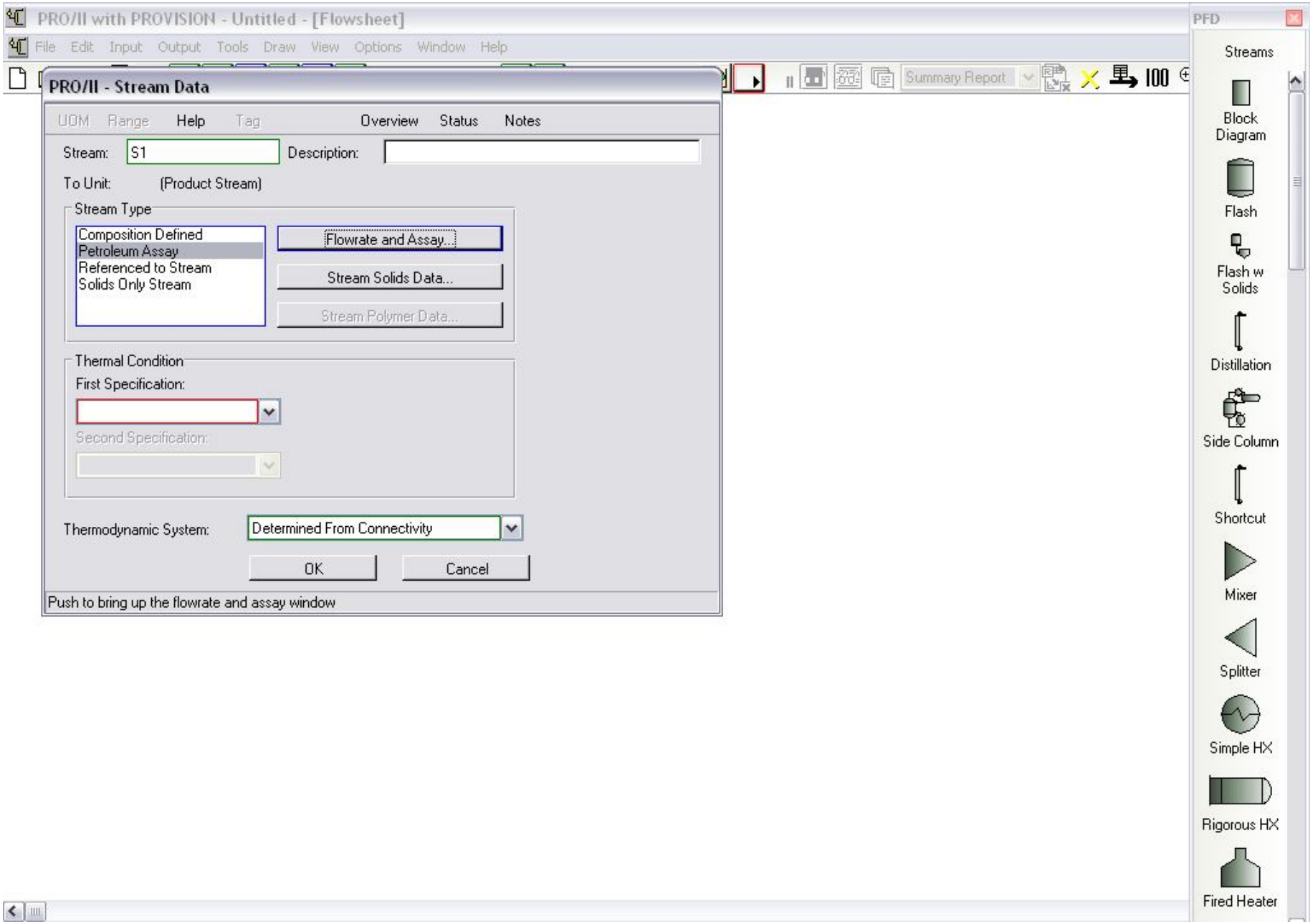

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Stream Data - Flowrate and Assay
UOM Range Help Tag
Specify fluid flowrate and assay for stream S1
Convert Units-of-Measure
Change lb/hr to bbl/day.
Long descriptions
Basis:
Mass
Liq. Vol.
ft3
gal
bbl
cm3
liter
m3
mm3
sec
min
hr
day
wk
mon
yr
Change Units
Convert Value
Cancel
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Push to bring up the flowrate and assay window

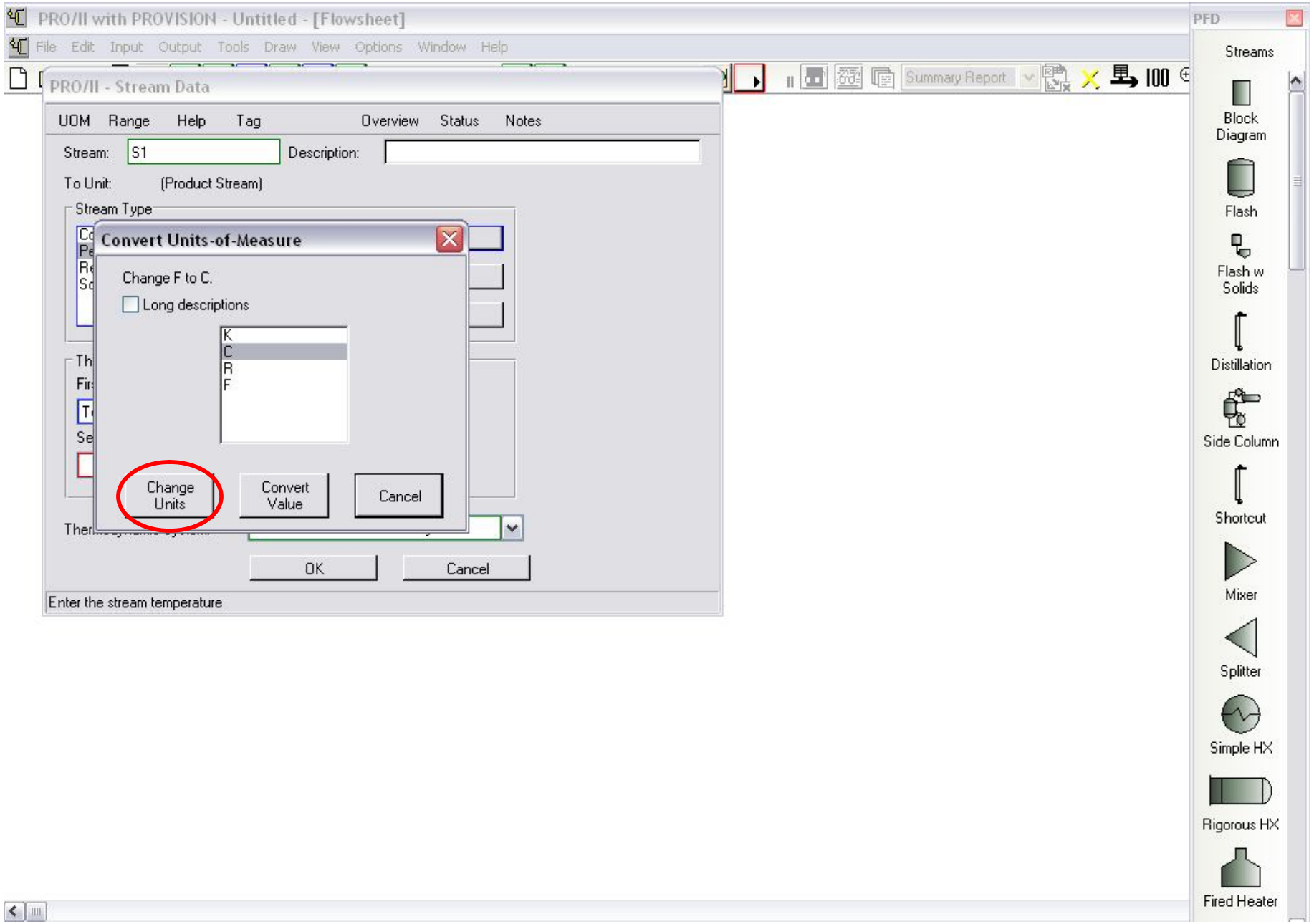

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Stream Data - Flowrate and Assay
UOM Range Help Tag
Specify fluid flowrate and assay for stream S1
Fluid Flowrate: 24000 bbl/day
Define/Edit Assay...
This stream's composition will be divided into pseudocomponents with boiling points based on the default set of TBP cutpoints. This stream will be included in the assay blending when the properties of these pseudocomponents are generated.
OK
Cancel
Enter the fluid flowrate
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Push to bring up the flowrate and assay window

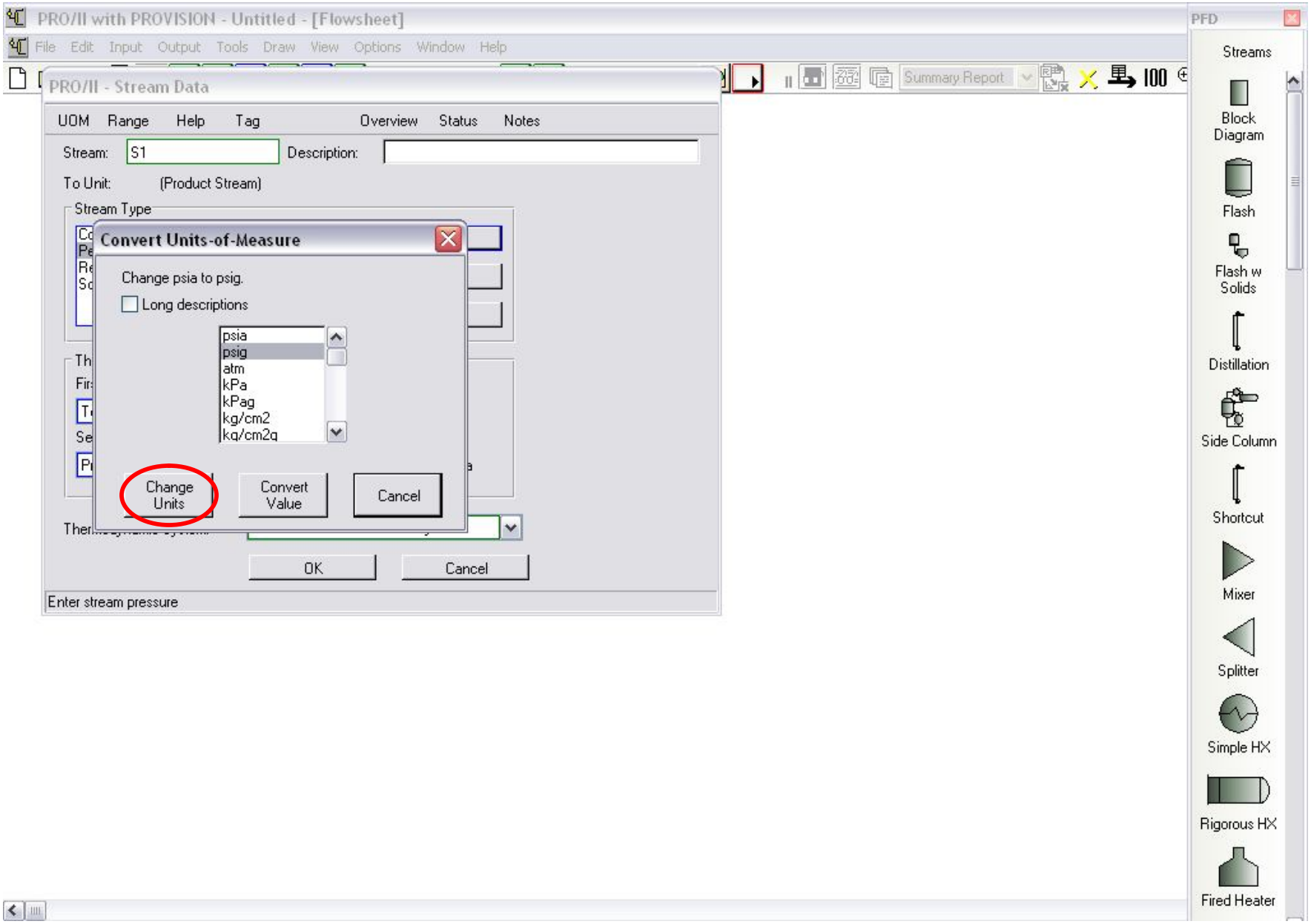

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Stream Data - Assay Definition
UOM Range Help Tag
Assay data for stream S1
Distillation
True Boiling Point
ASTM D86
ASTM D1160
ASTM D2887
Pressure: 14.696 psia
Correct for Cracking
(Recommended for API 63 and
Edmister-Okamoto Interconversion only)
Cut
Copy
Paste
Insert
Percent Distilled
Temperature F
1
2
3
4
5
6
7
8
9
10
View Curve...
Gravity Data
API Gravity
Specific Gravity
Watson K-Factor
Average:
Gravity Curve...
Additional Data
Molecular Weight...
Refinery Inspection Properties...
Lightends...
User-defined Special Properties...
OK
Cancel
Exit the window after saving all data

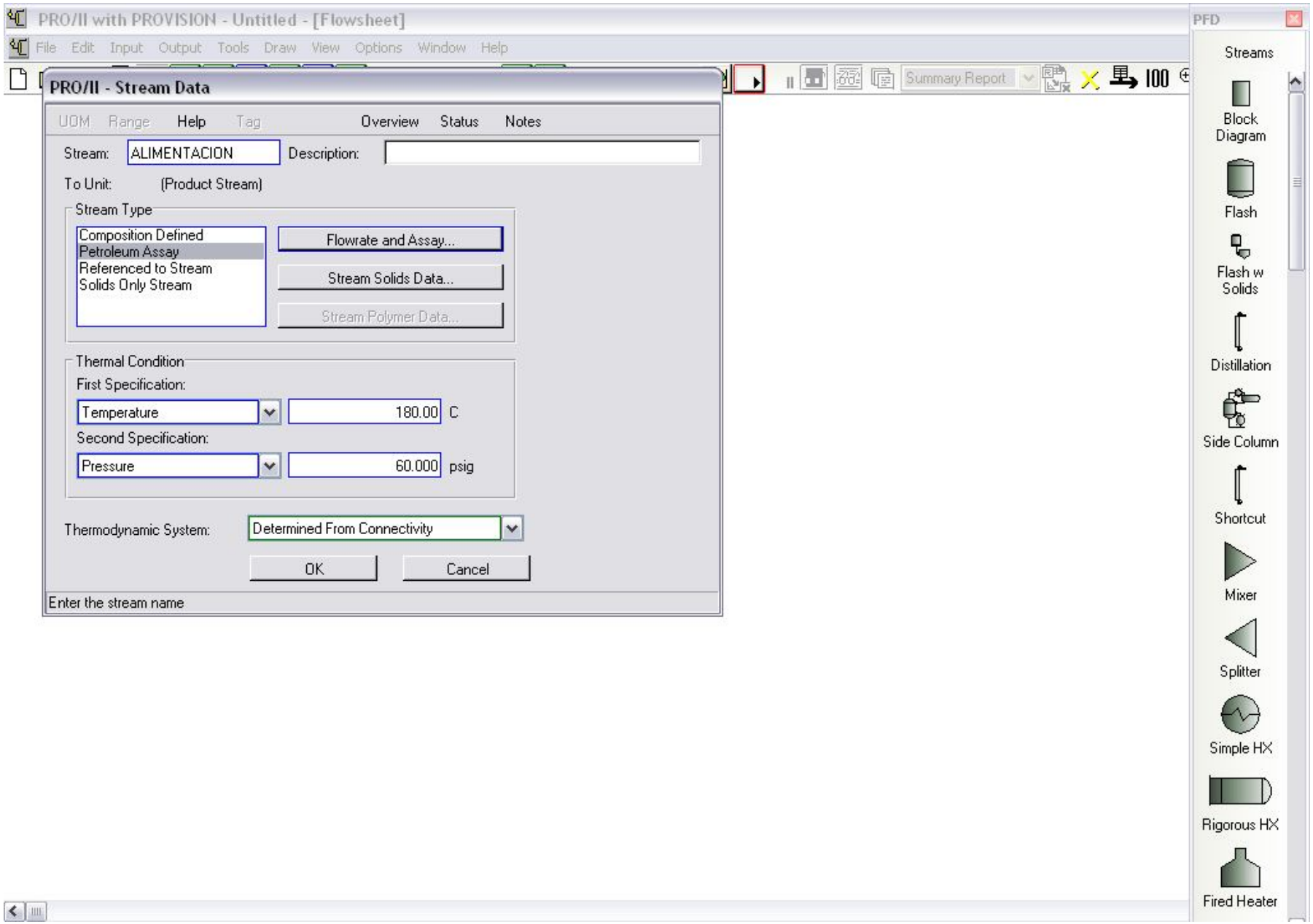

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Stream Data - Assay Definition
UOM Range Help Tag
Assay data for stream S1
Distillation
True Boiling Point
ASTM D86
ASTM D1160
ASTM D2887
TBP Basis
Liquid Volume
Weight
Pressure: 14.696 psia
Correct for Cracking
(Recommended for API 63 and
Edmister-Okamoto Interconversion only)
Cut
Copy
Paste
Insert
Percent Distilled
Temperature F
1
2
3
4
5
6
7
8
9
10
View Curve...
Gravity Data
API Gravity
Specific Gravity
Watson K-Factor
Average:
Gravity Curve...
Additional Data
Molecular Weight...
Refinery Inspection Properties...
Lightends...
User-defined Special Properties...
OK
Cancel
Select TBP distillation

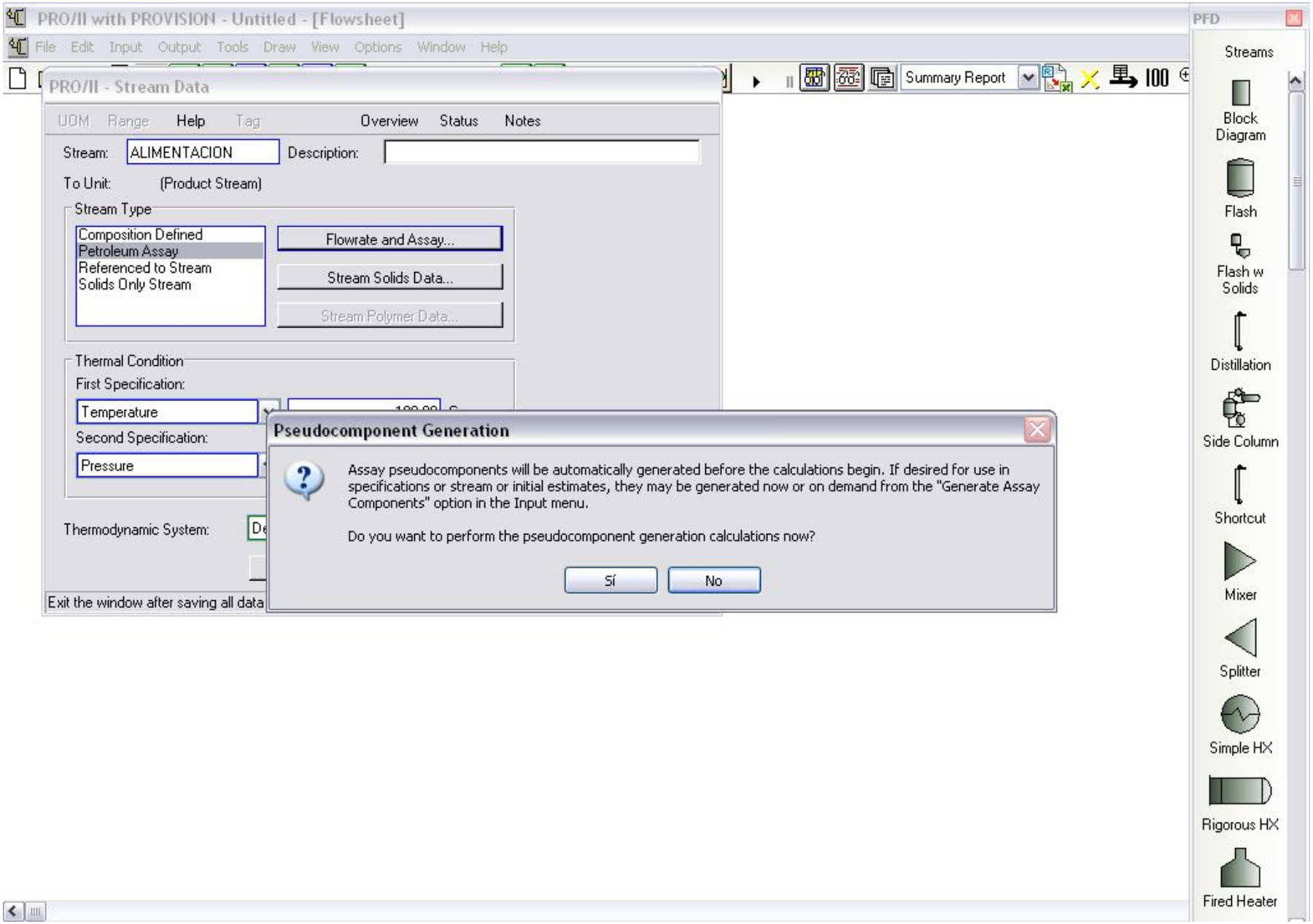

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Stream Data - Assay Definition
UOM Range Help Tag
Assay data for stream S1
Distillation
True Boiling Point
ASTM D86
ASTM D1160
ASTM D2887
TBP Basis
Liquid Volume
Weight
Pressure: 14.696 psia
Correct for Cracking
(Recommended for API 63 and
Edmister-Okamoto Interconversion only)
Gravity Data
API Gravity
Specific Gravity
Watson K-Factor
Average: 8.99
Gravity Curve...
Cut
Copy
Paste
Insert
Percent Distilled
Temperature F
1 0.00 379.20
2 1.00 440.39
3 2.00 497.09
4 3.50 550.72
5 5.00 588.64
6 7.50 642.16
7 10.00 658.17
8 12.50 682.46
9 15.00 699.58
10 17.50 727.99
View Curve...
Additional Data
Molecular Weight...
Refinery Inspection Properties...
Lightends...
User-defined Special Properties...
OK
Cancel
Enter the average gravity

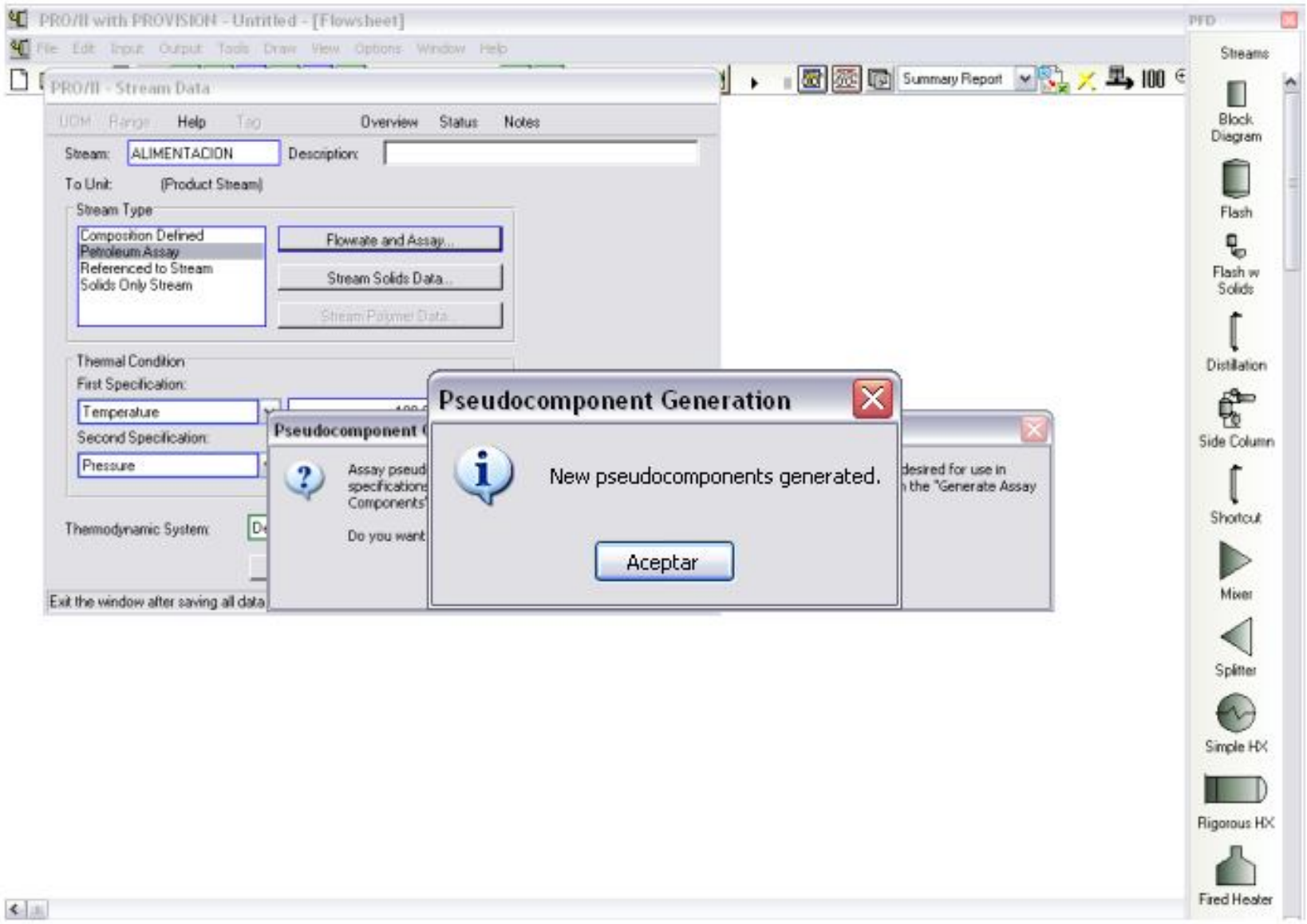

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S1
Description:
To Unit: (Product Stream)
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Assay...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Second Specification:
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Push to bring up the flowrate and assay window
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

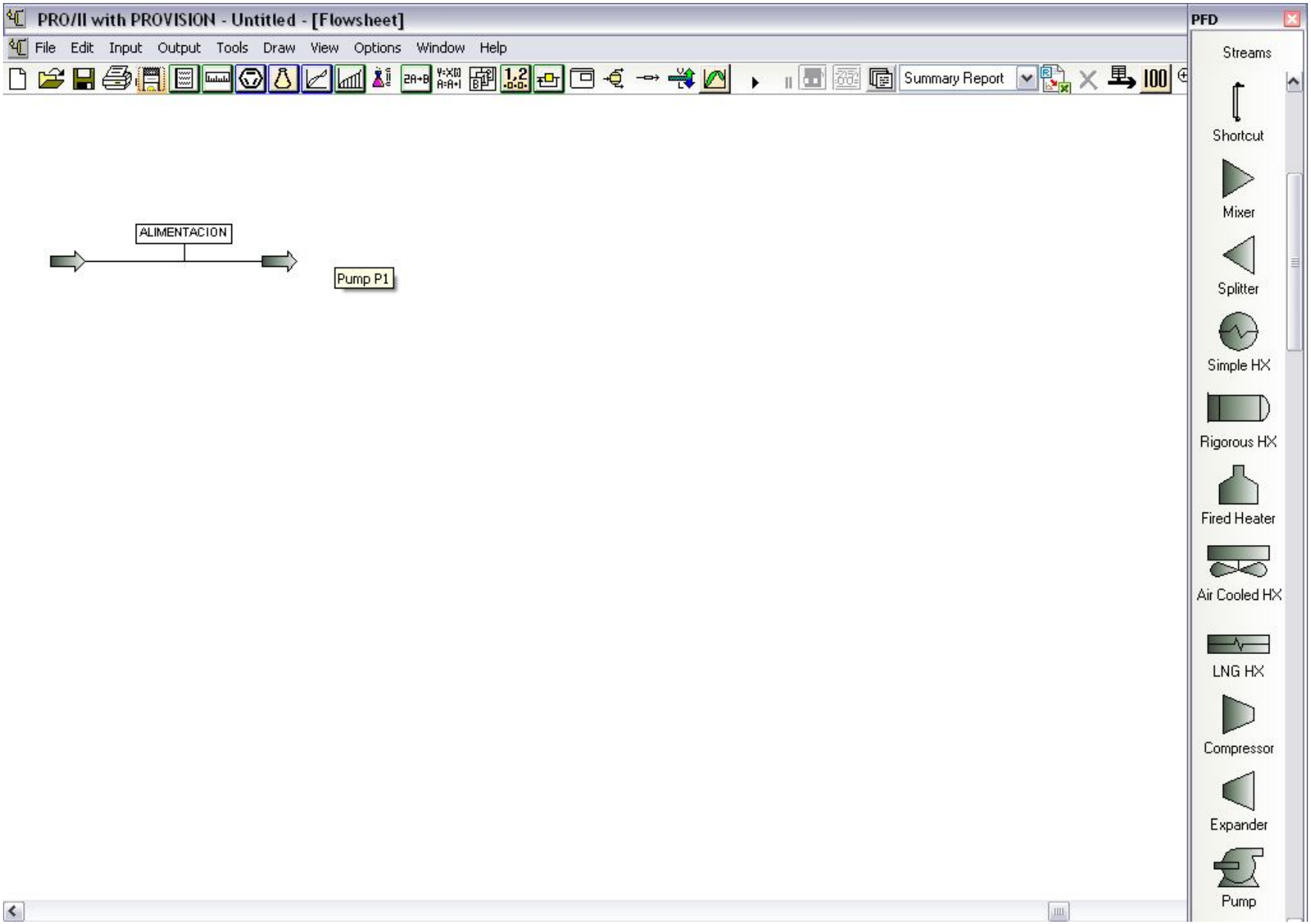

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S1
Description:
To Unit: (Product Stream)
Stream Type
Convert Units-of-Measure
Change F to C.
Long descriptions
K
C
R
F
Change Units
Convert Value
Cancel
OK
Cancel
Enter the stream temperature
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

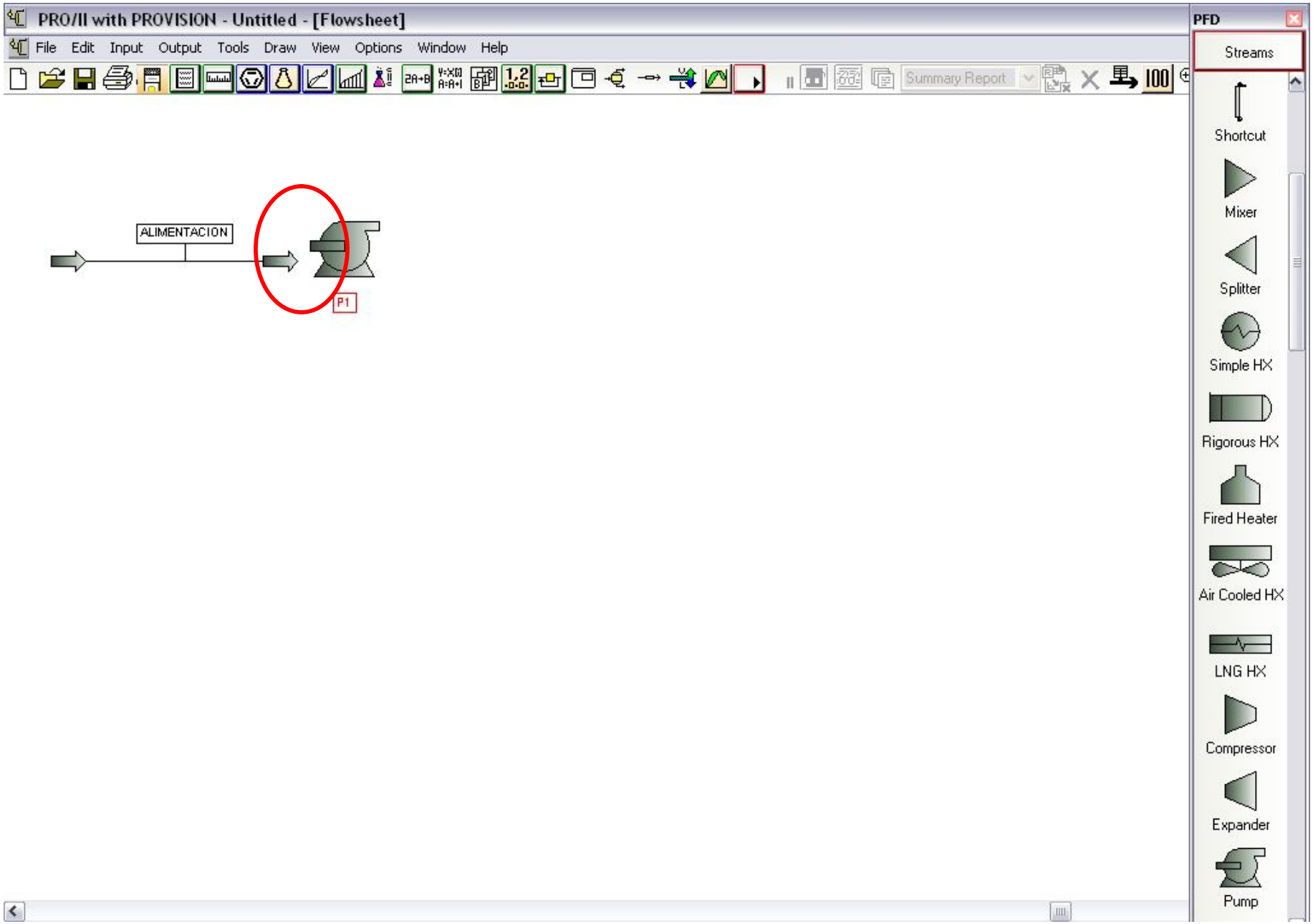

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S1
Description:
To Unit: (Product Stream)
Stream Type
Convert Units-of-Measure
Change psia to psig.
Long descriptions
psia
psig
atm
kPa
kPag
kg/cm2
kg/cm2g
Change Units
Convert Value
Cancel
OK
Cancel
Enter stream pressure
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

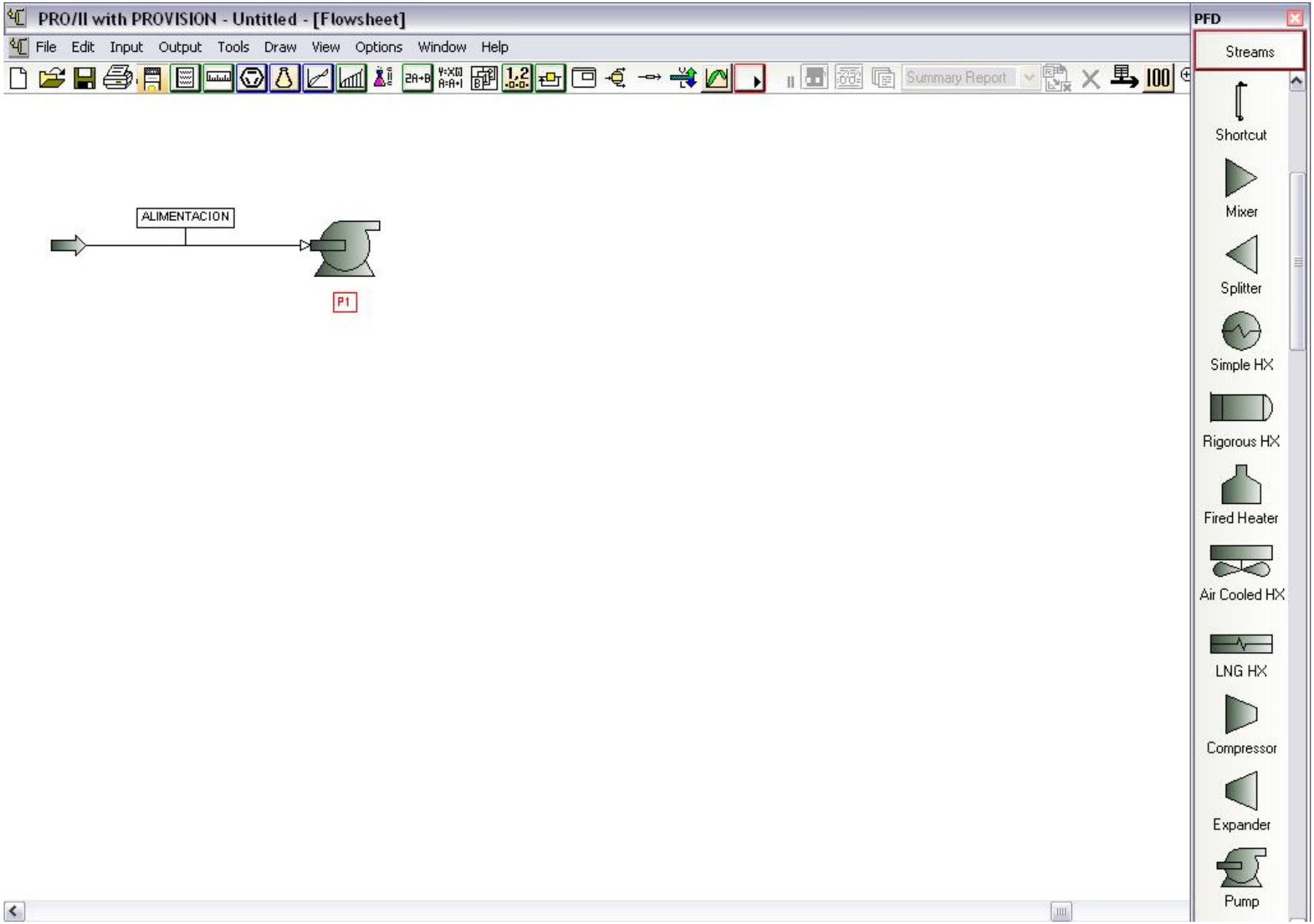

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: ALIMENTACION
Description:
To Unit: (Product Stream)
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Assay...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Temperature
180.00
C
Second Specification:
Pressure
60.000
psig
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Enter the stream name
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

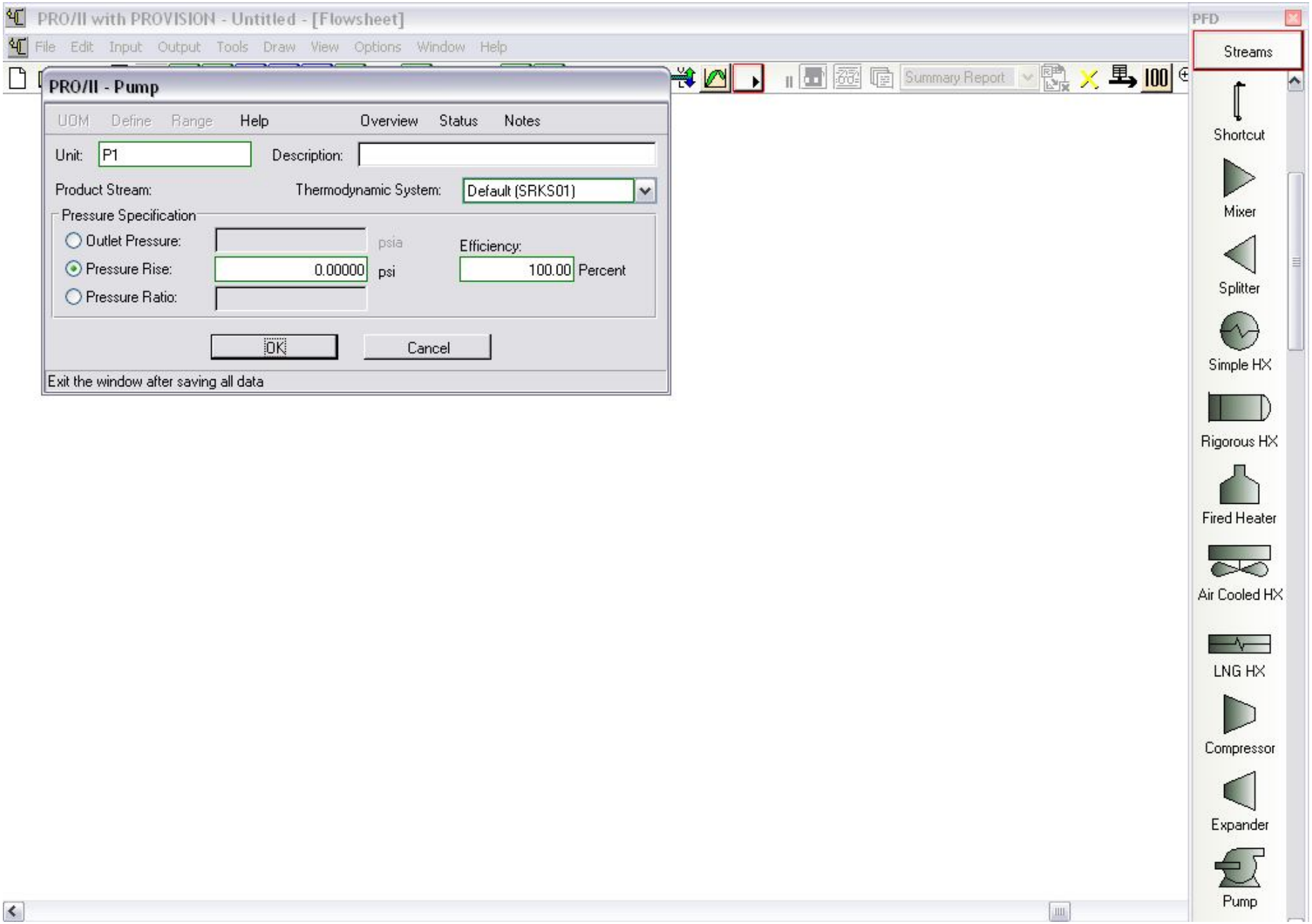

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: ALIMENTACION
Description:
To Unit: (Product Stream)
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Assay...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Temperature
Second Specification:
Pressure
Thermodynamic System:
Exit the window after saving all data
Pseudocomponent Generation
Assay pseudocomponents will be automatically generated before the calculations begin. If desired for use in specifications or stream or initial estimates, they may be generated now or on demand from the "Generate Assay Components" option in the Input menu.
Do you want to perform the pseudocomponent generation calculations now?
Sí
No
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

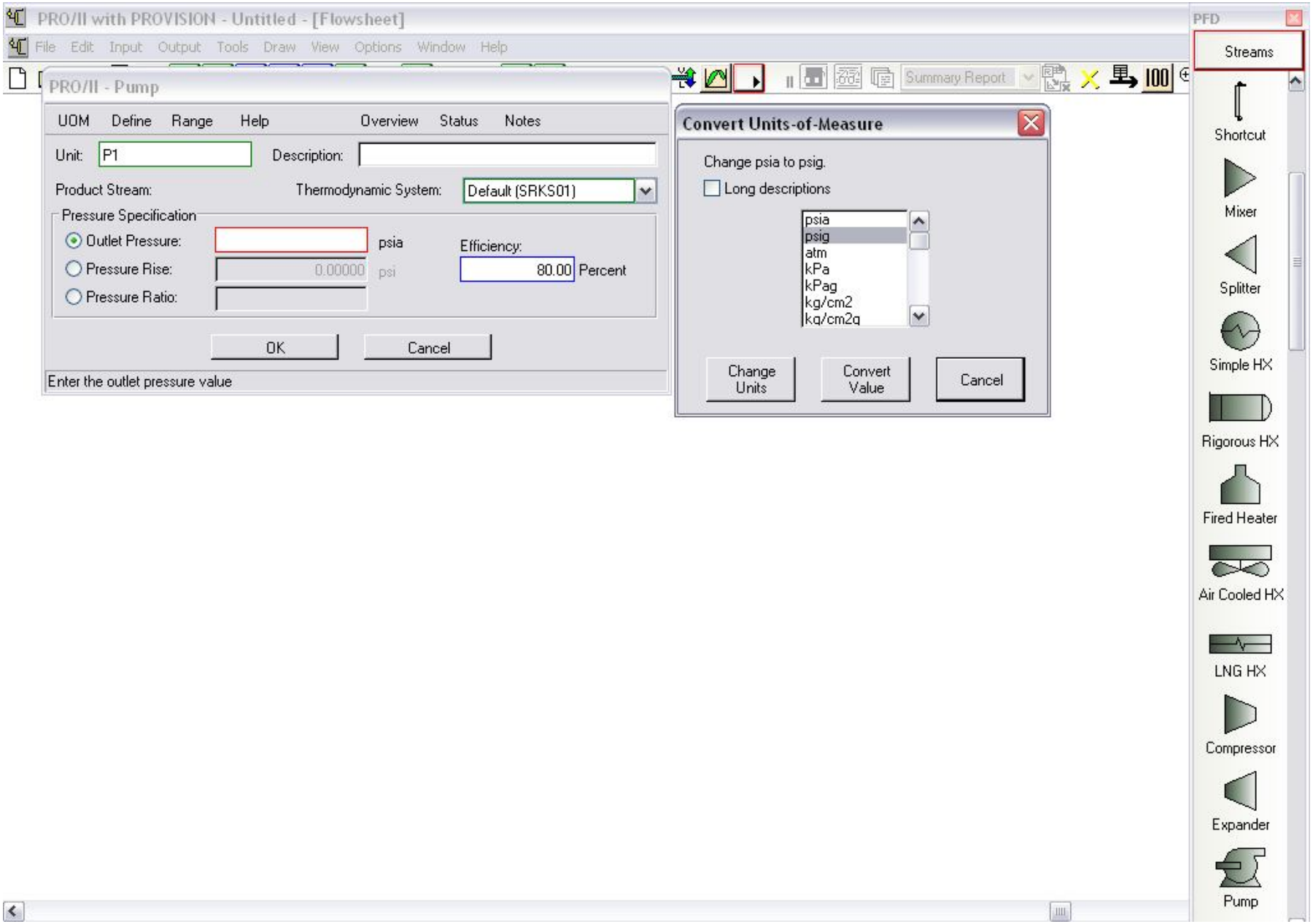

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag
Overview Status Notes
Stream: ALIMENTACION
Description:
To Unit: (Product Stream)
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Assay...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Temperature
Second Specification:
Pressure
Thermodynamic System:
Exit the window after saving all data
Pseudocomponent Generation
New pseudocomponents generated.
Aceptar
Assay pseud
specifications
Components'
Do you want
desired for use in
the "Generate Assay
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

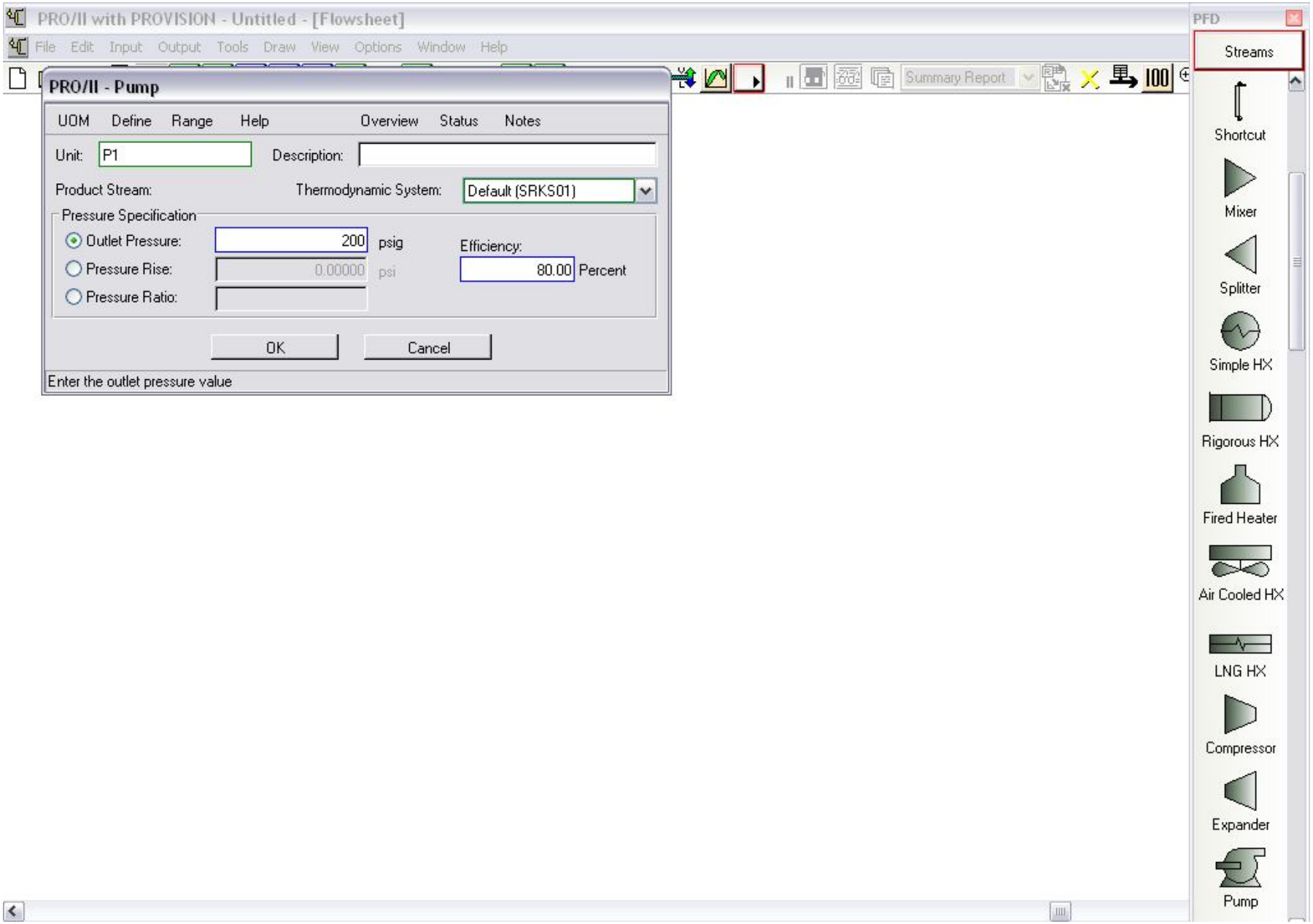

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
ALIMENTACION
Pump P1
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

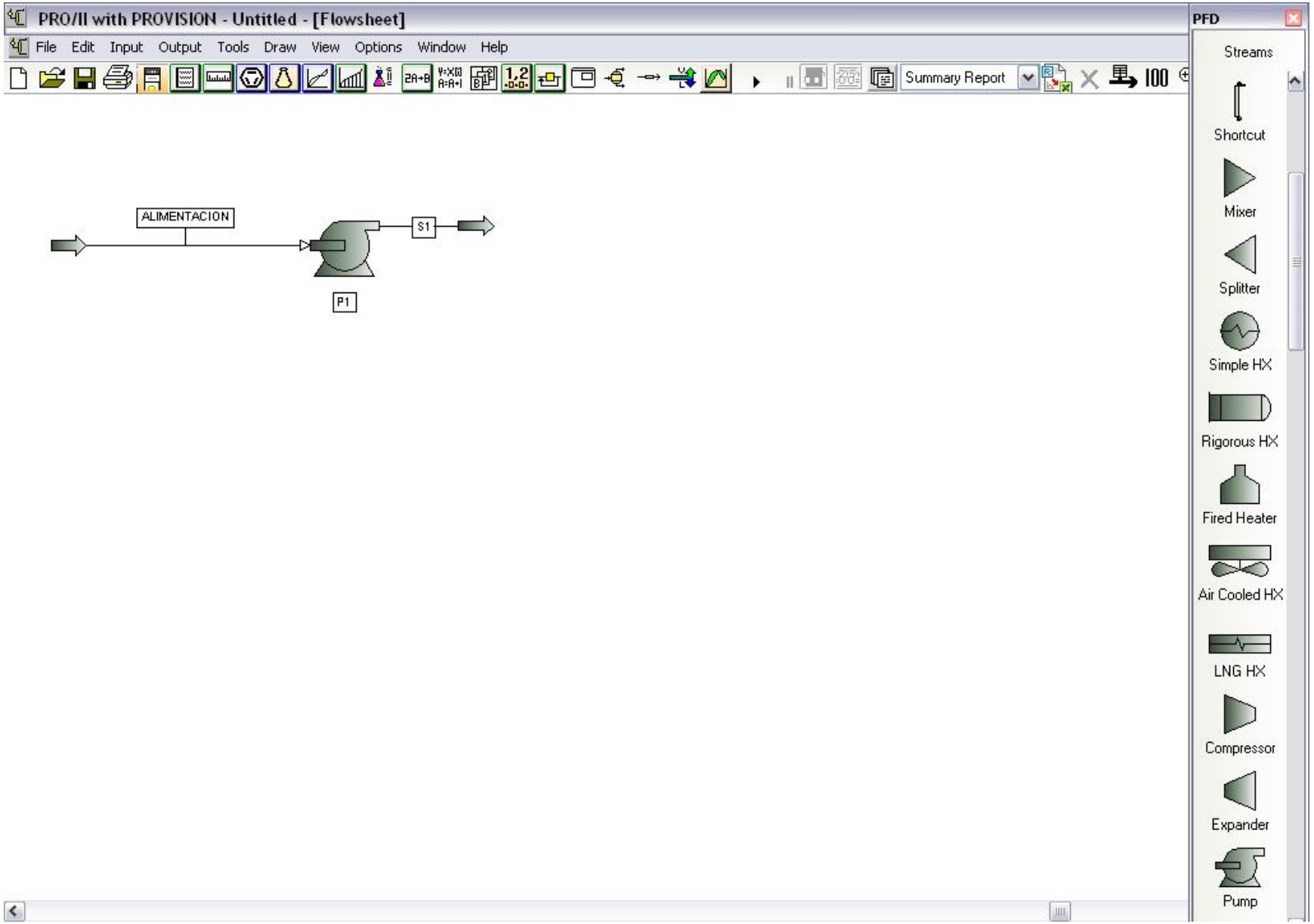

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
ALIMENTACION
P1
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

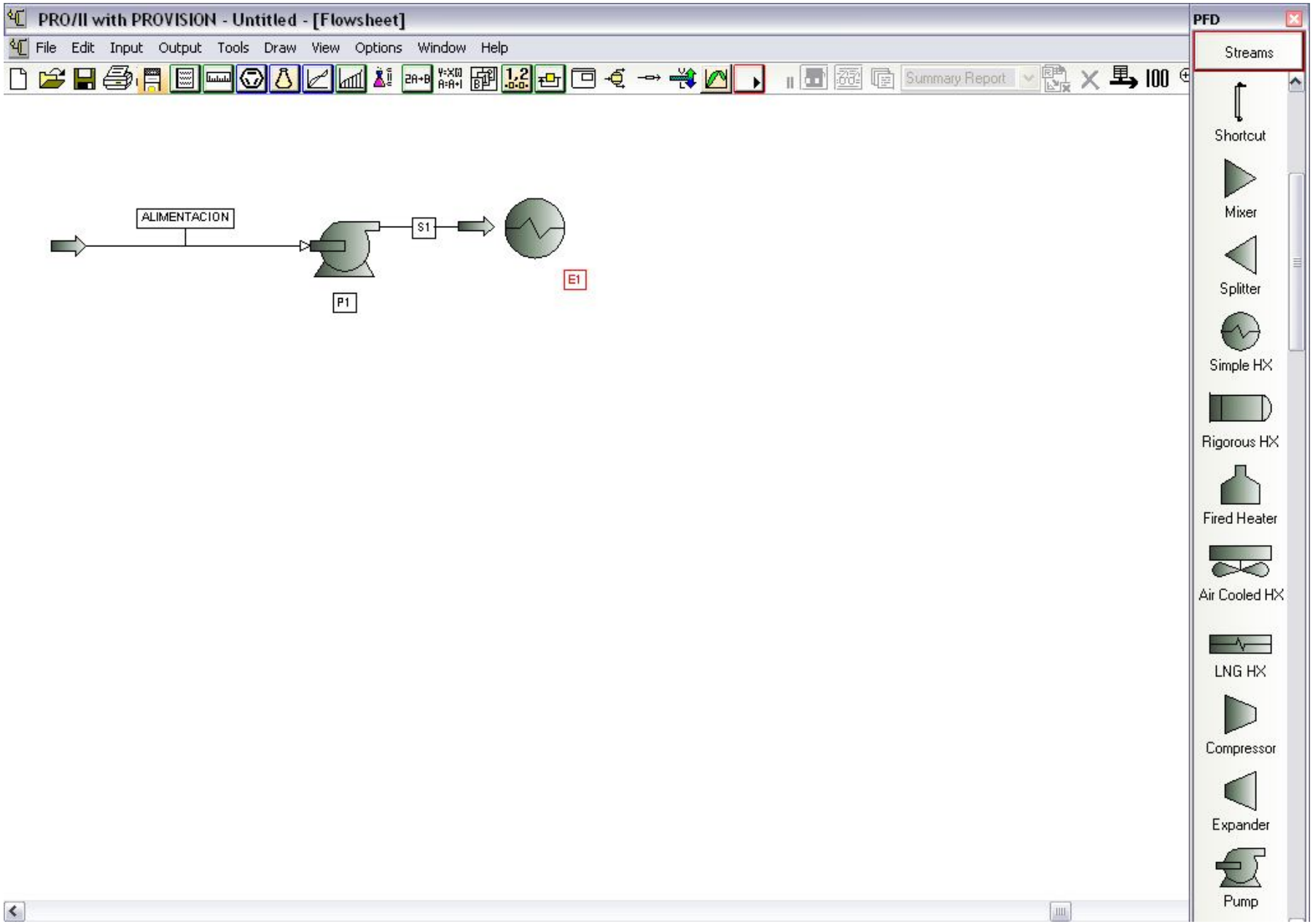

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
ALIMENTACION
P1
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

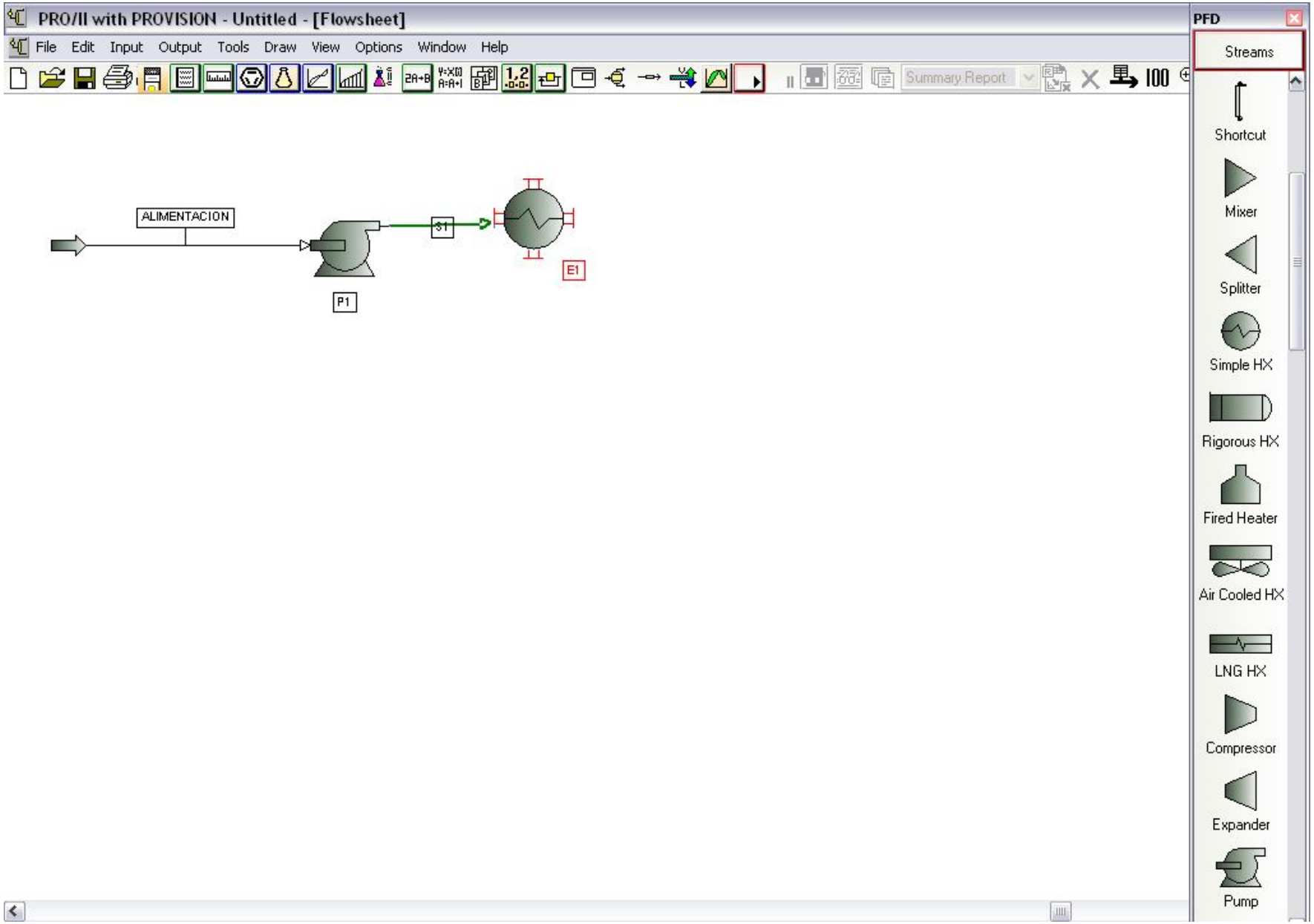

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump
PRO/II - Pump
UOM Define Range Help Overview Status Notes
Unit: P1
Description:
Product Stream:
Thermodynamic System: Default (SRKS01)
Pressure Specification
Outlet Pressure: psia
Pressure Rise: 0.00000 psi
Pressure Ratio:
Efficiency: 100.00 Percent
OK
Cancel
Exit the window after saving all data

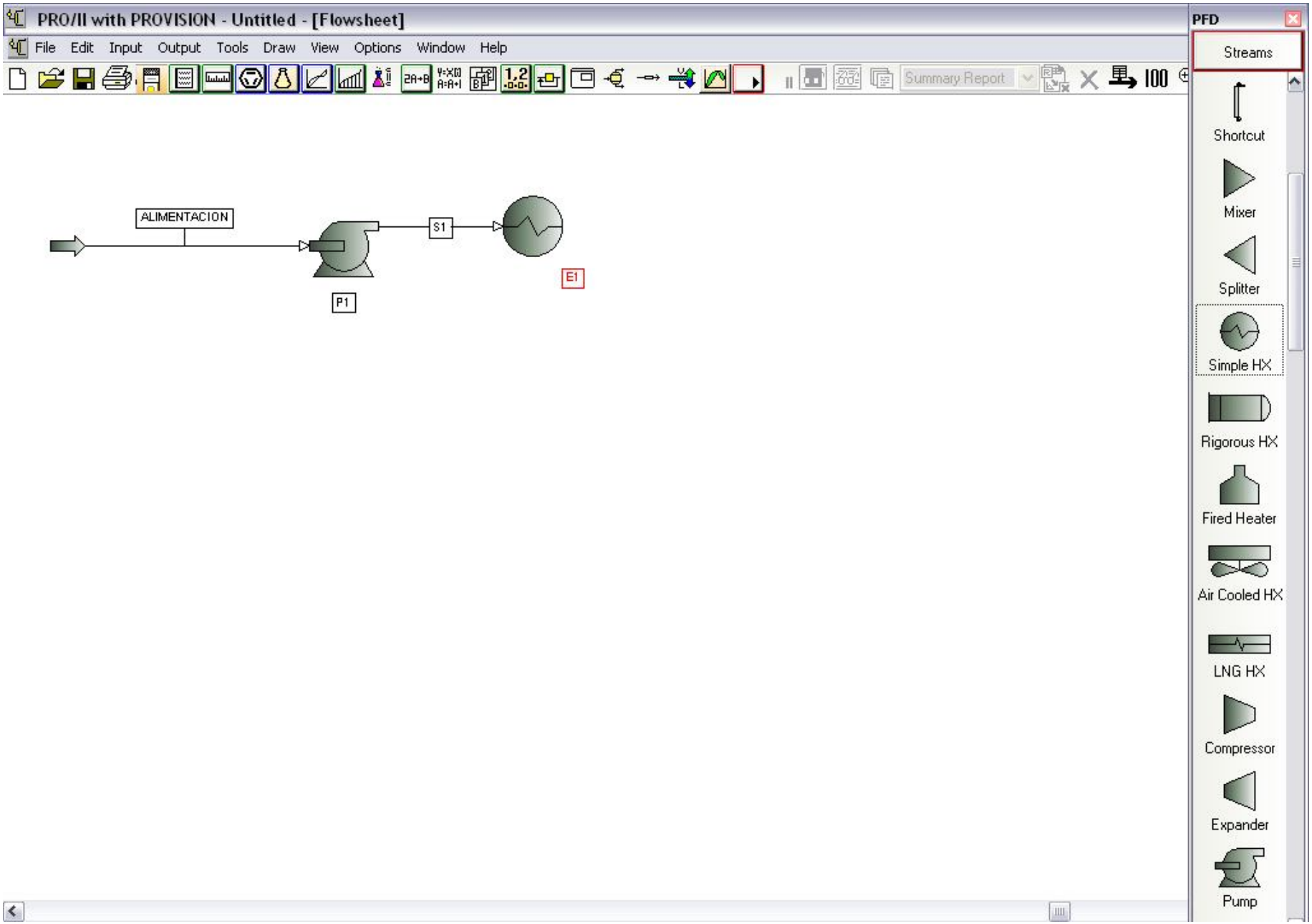

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Pump
UOM Define Range Help Overview Status Notes
Unit: P1
Description:
Product Stream:
Thermodynamic System: Default (SRKS01)
Pressure Specification
Outlet Pressure:
psia
Efficiency:
Pressure Rise: 0.00000 psi
80.00 Percent
Pressure Ratio:
OK
Cancel
Enter the outlet pressure value
Convert Units-of-Measure
Change psia to psig.
Long descriptions
psia
psig
atm
kPa
kPag
kg/cm2
kg/cm2g
Change Units
Convert Value
Cancel
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

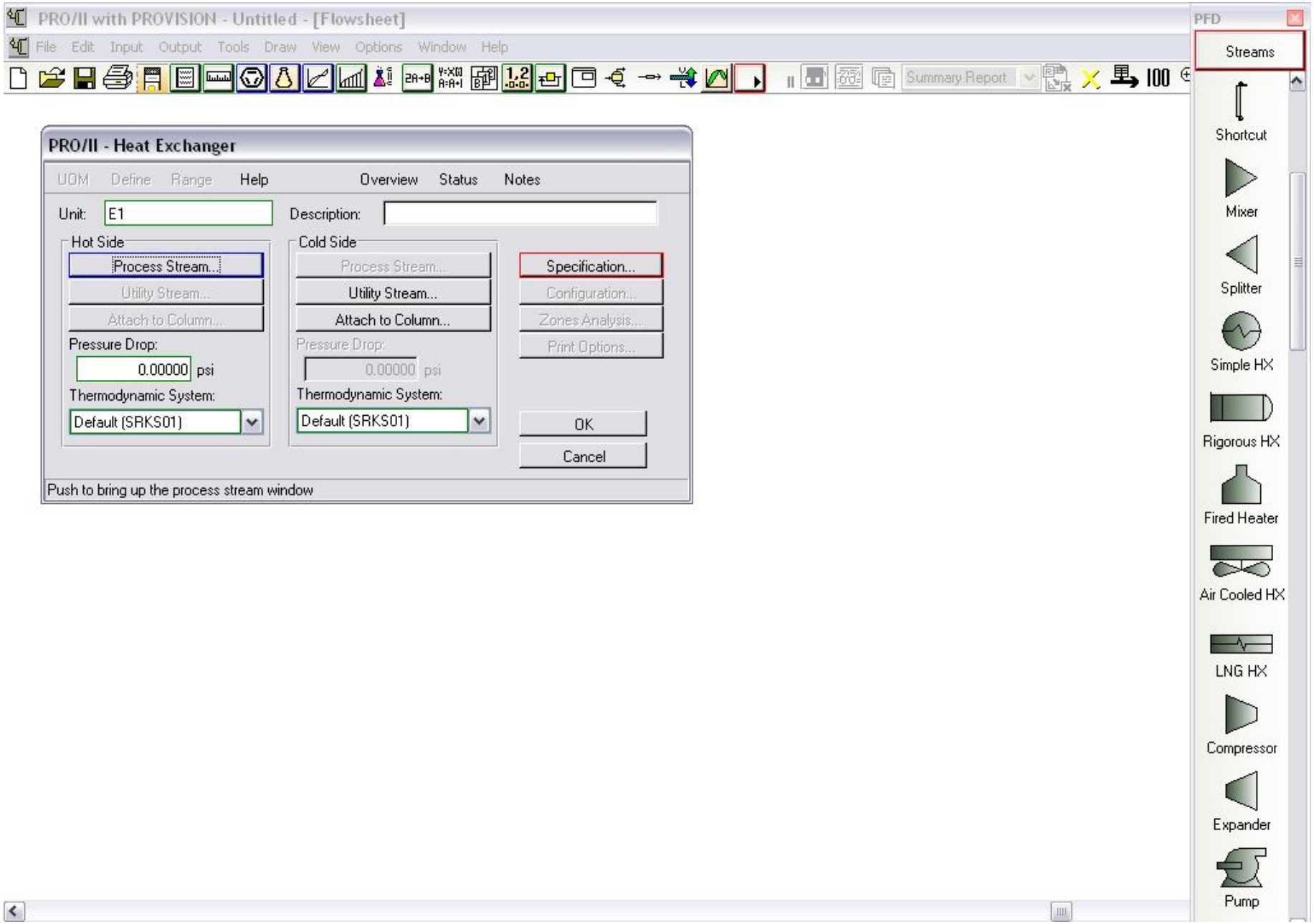

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Pump
UOM Define Range Help Overview Status Notes
Unit: P1
Description:
Product Stream:
Thermodynamic System: Default (SRKS01)
Pressure Specification
Outlet Pressure: 200 psig
Pressure Rise: 0.00000 psi
Pressure Ratio:
Efficiency: 80.00 Percent
OK
Cancel
Enter the outlet pressure value
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

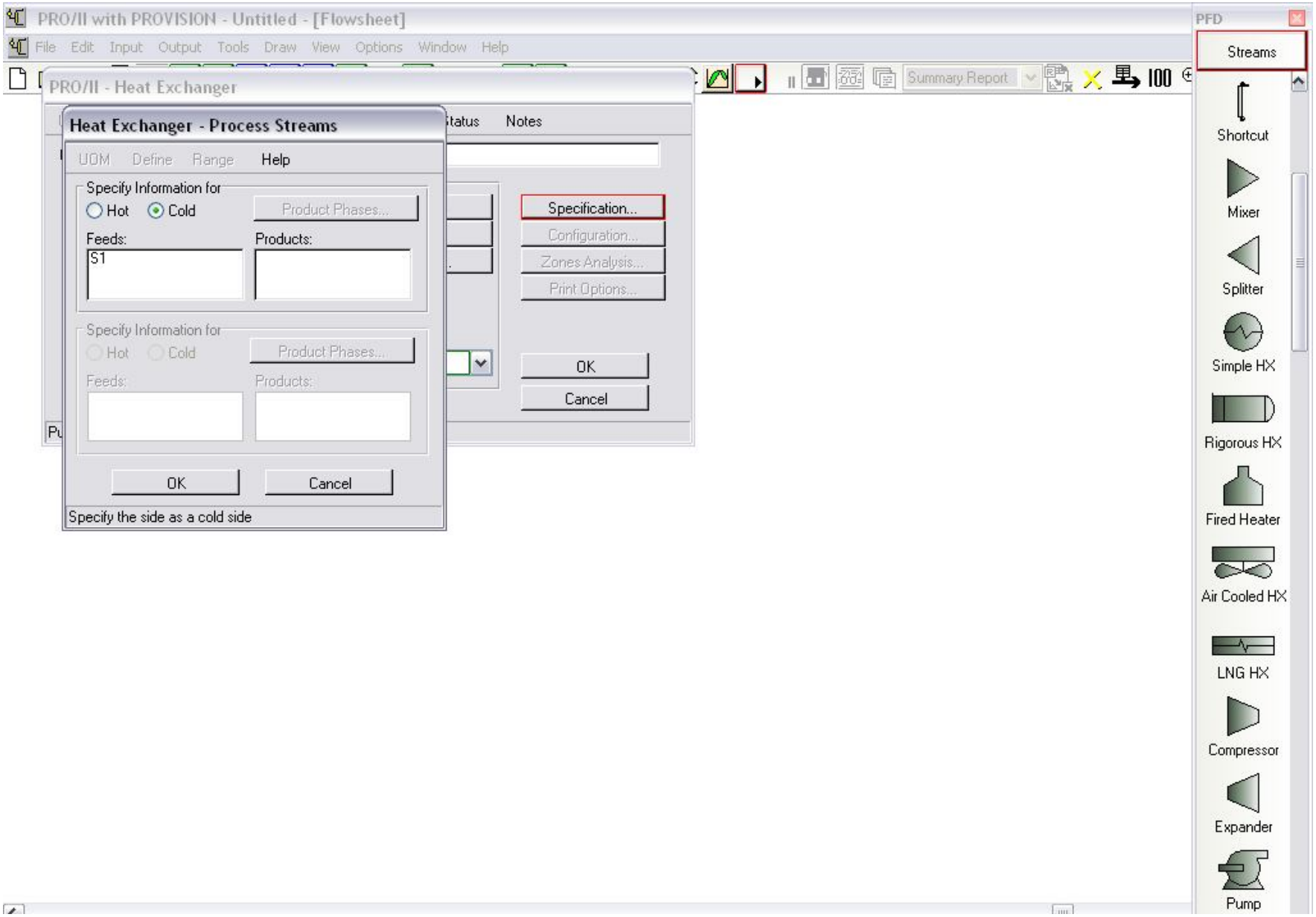

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
ALIMENTACION
S1
P1
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

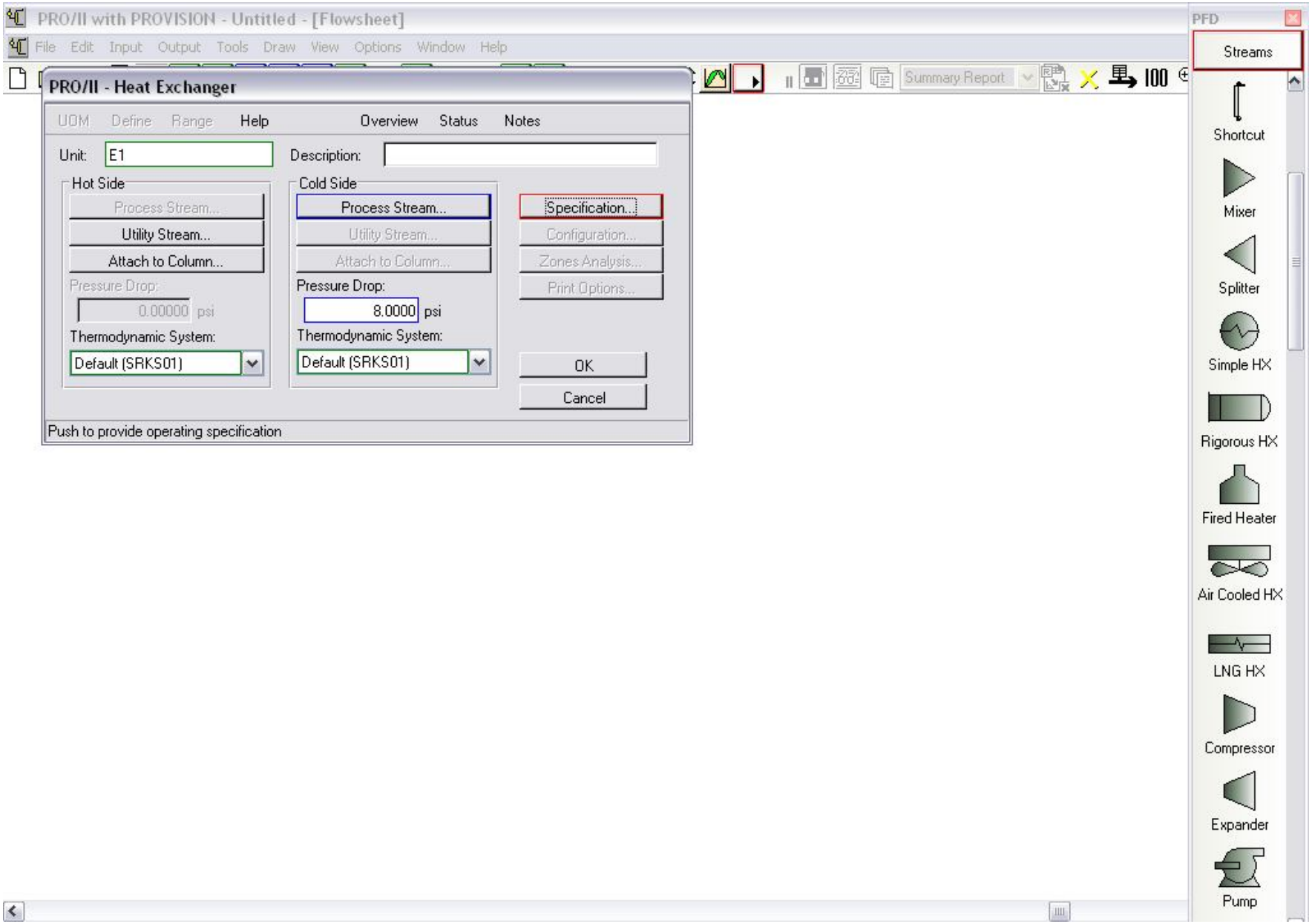

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
ALIMENTACION
S1
P1
E1
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

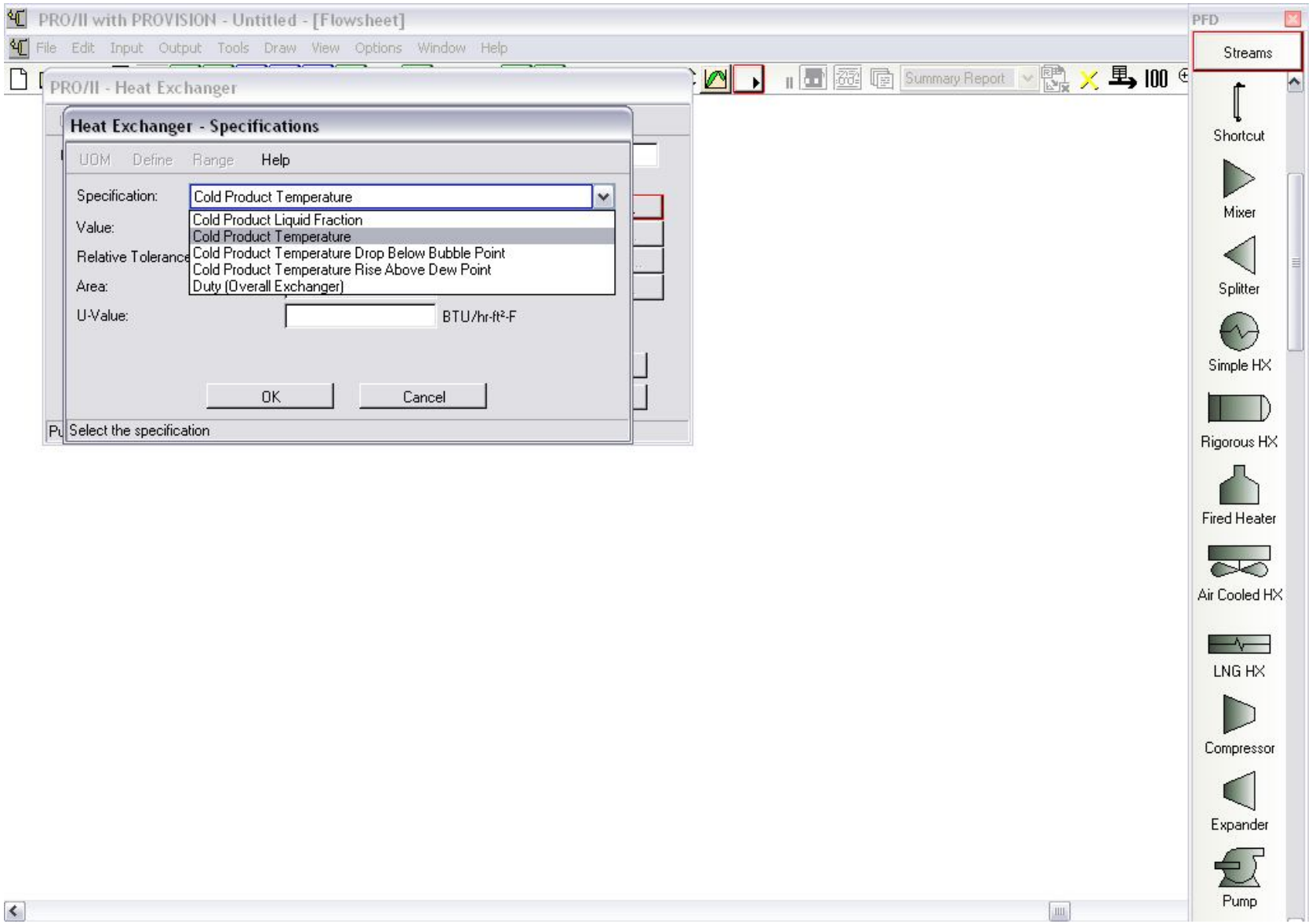

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump
ALIMENTACION
S1
E1
P1

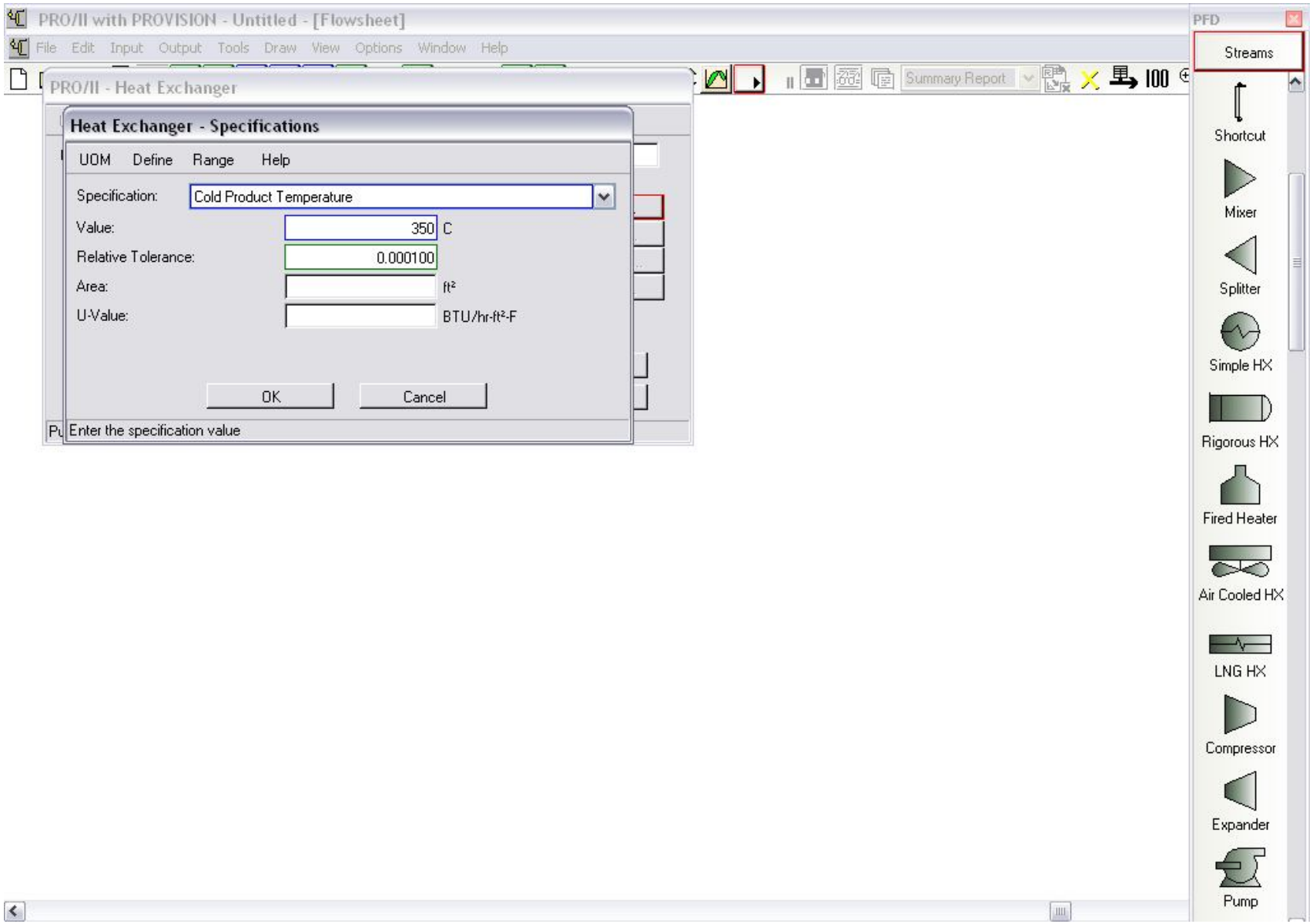

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
ALIMENTACION
S1
E1
P1
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

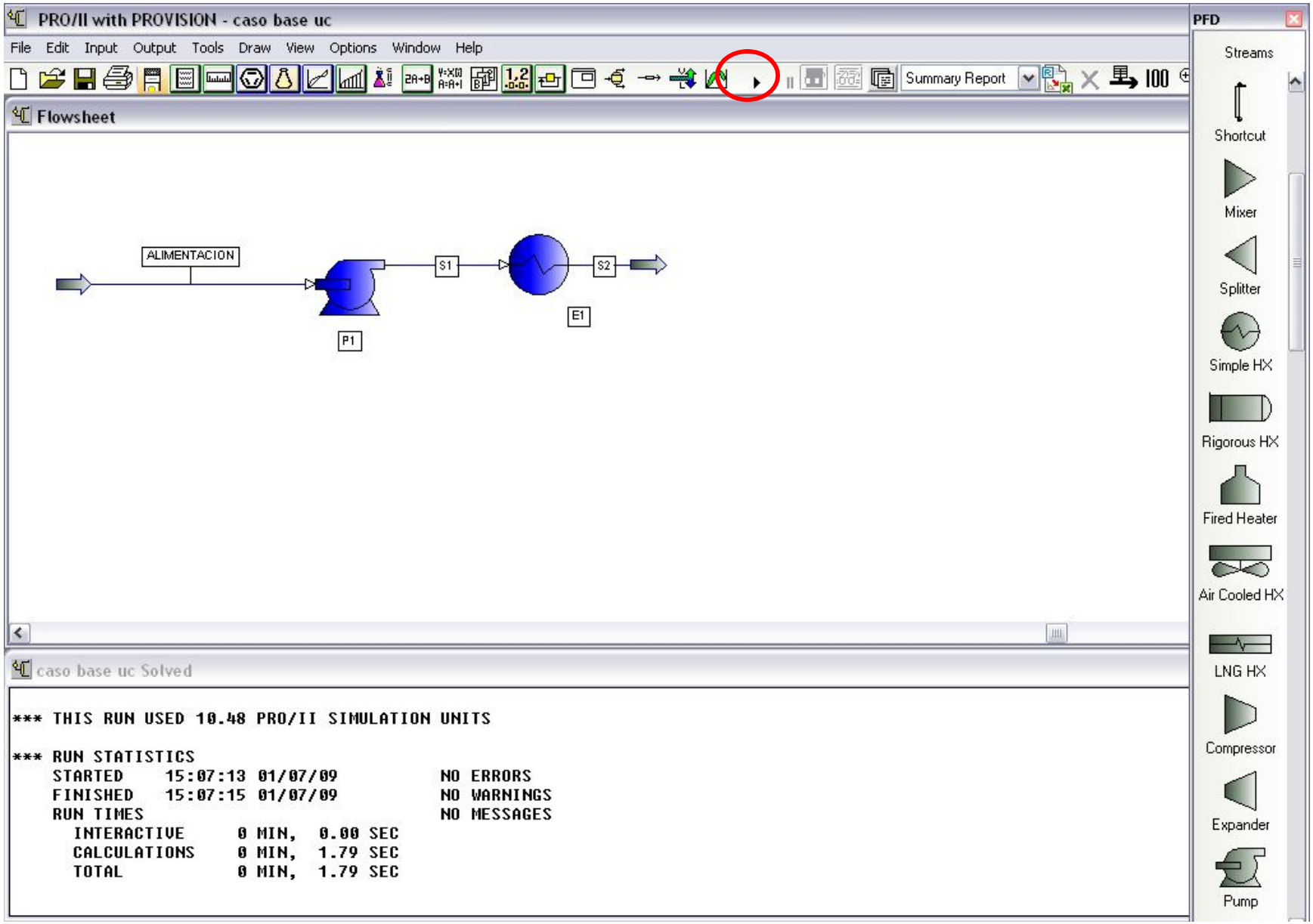

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump
PRO/II - Heat Exchanger
UOM Define Range Help Overview Status Notes
Unit: E1
Description:
Hot Side
Process Stream...
Utility Stream...
Attach to Column...
Pressure Drop:
0.00000 psi
Thermodynamic System:
Default (SRKS01)
Cold Side
Process Stream...
Utility Stream...
Attach to Column...
Pressure Drop:
0.00000 psi
Thermodynamic System:
Default (SRKS01)
Specification...
Configuration...
Zones Analysis...
Print Options...
OK
Cancel
Push to bring up the process stream window

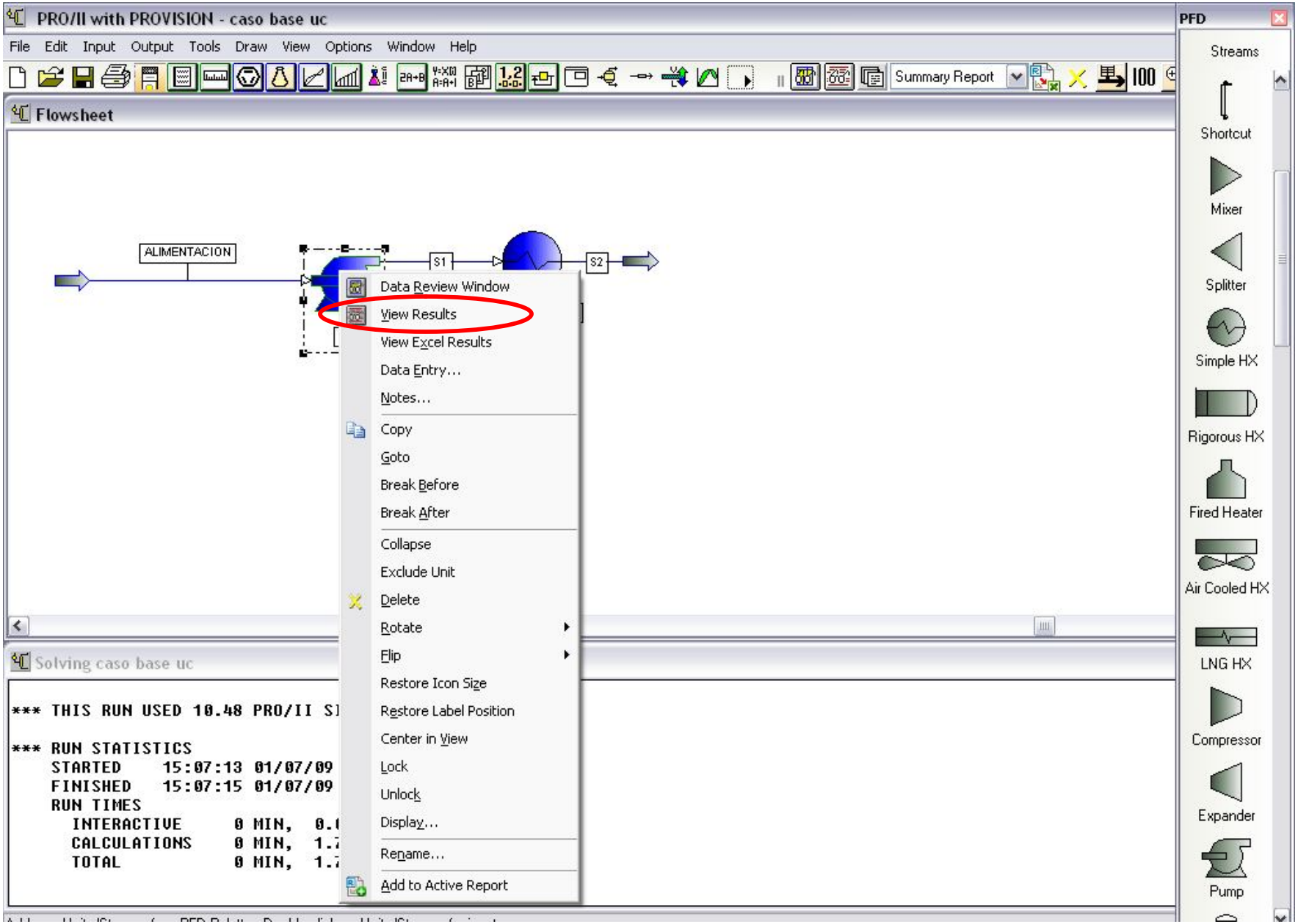

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
Heat Exchanger - Process Streams
UOM Define Range Help
Specify Information for
Hot Cold
Product Phases...
Feeds:
Products:
S1
Specify Information for
Hot Cold
Product Phases...
Feeds:
Products:
OK
Cancel
Specify the side as a cold side
Status
Notes
Specification...
Configuration...
Zones Analysis...
Print Options...
OK
Cancel
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

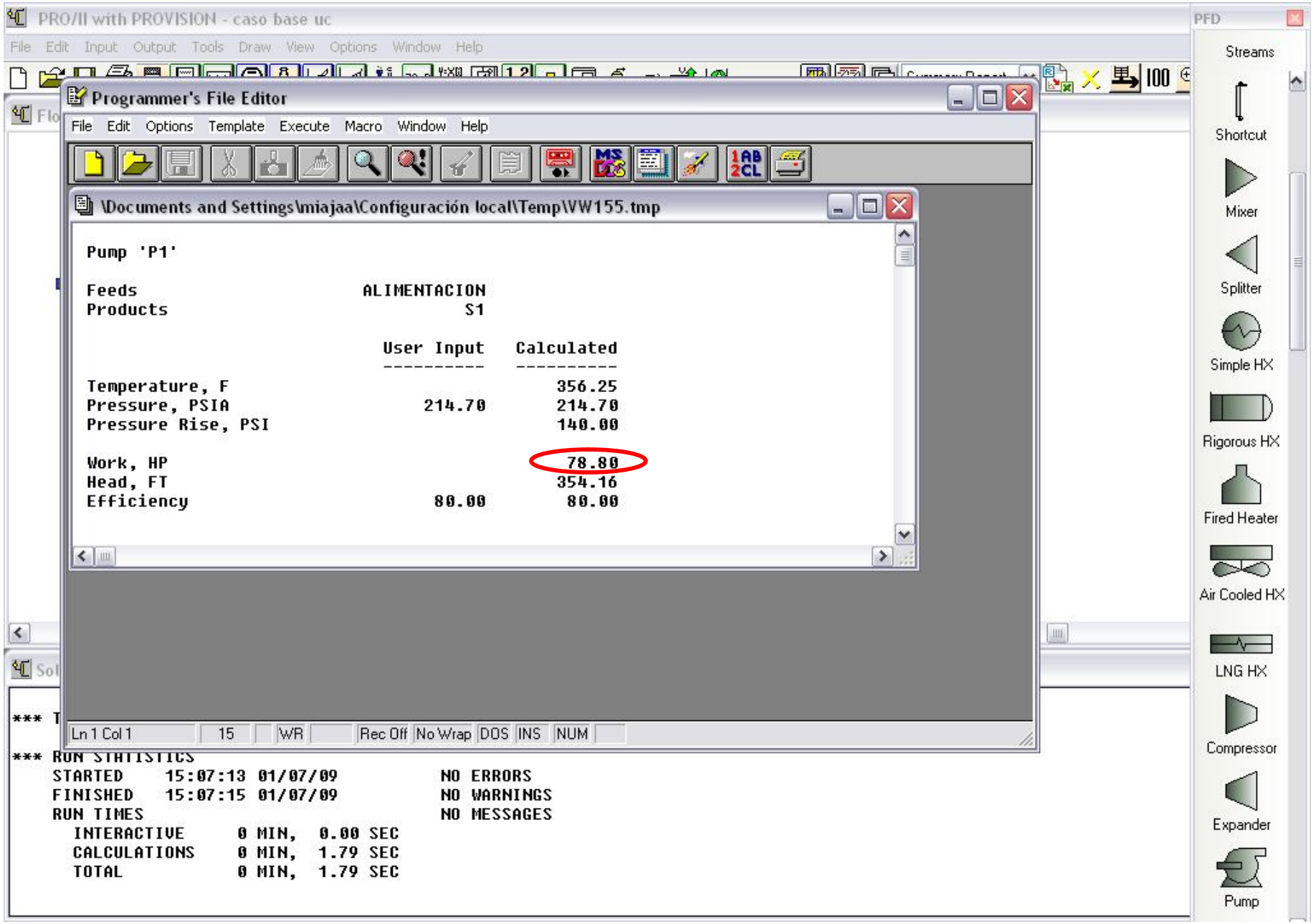

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
UOM Define Range Help Overview Status Notes
Unit: E1
Description:
Hot Side
Process Stream...
Utility Stream...
Attach to Column...
Pressure Drop:
0.00000 psi
Thermodynamic System:
Default (SRKS01)
Cold Side
Process Stream...
Utility Stream...
Attach to Column...
Pressure Drop:
8.0000 psi
Thermodynamic System:
Default (SRKS01)
Specification...
Configuration...
Zones Analysis...
Print Options...
OK
Cancel
Push to provide operating specification
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

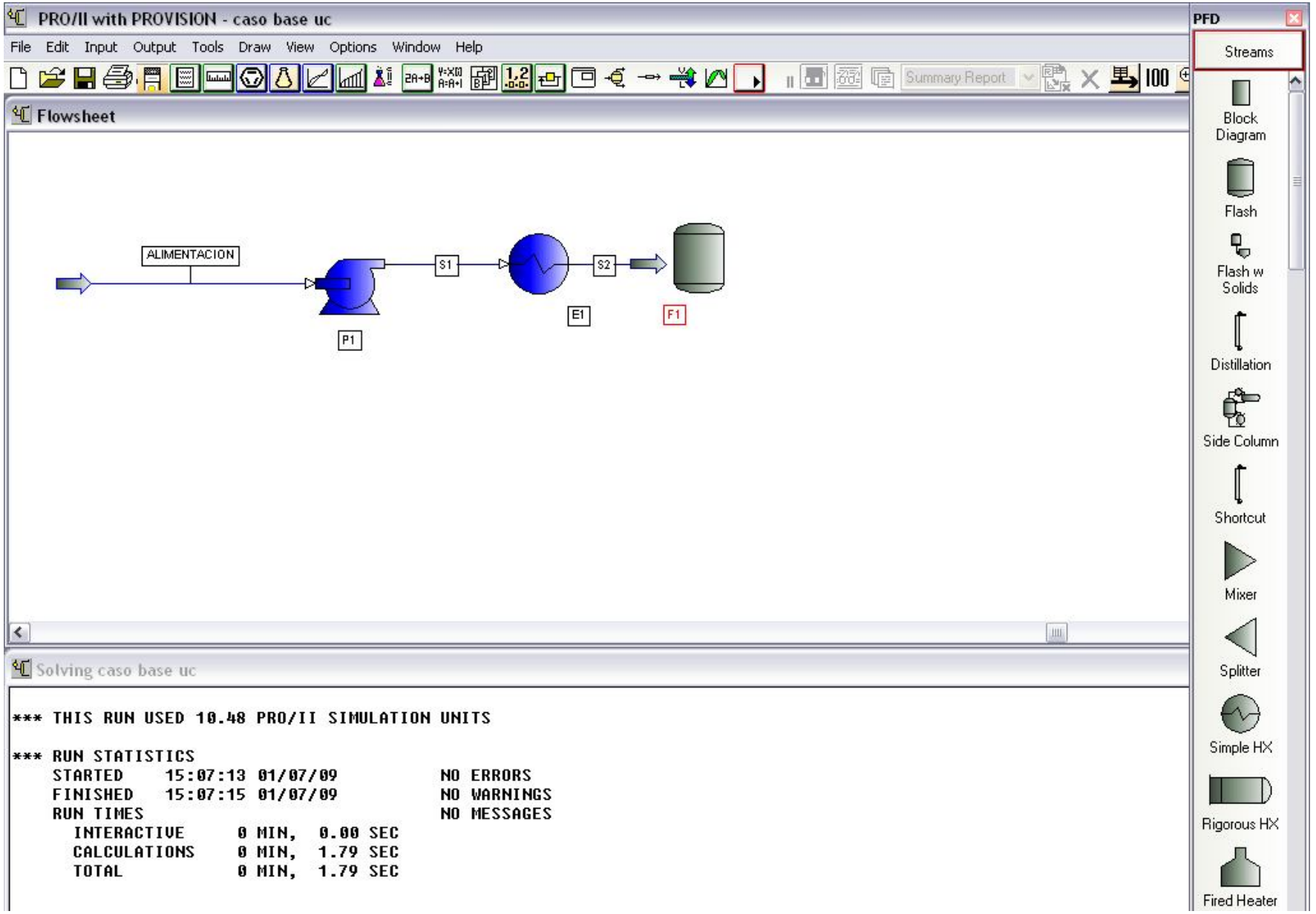

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
Heat Exchanger - Specifications
UOM Define Range Help
Specification: Cold Product Temperature
Value:
Relative Tolerance
Area:
U-Value:
BTU/hr-ft²-F
Cold Product Liquid Fraction
Cold Product Temperature
Cold Product Temperature Drop Below Bubble Point
Cold Product Temperature Rise Above Dew Point
Duty (Overall Exchanger)
OK
Cancel
Select the specification
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

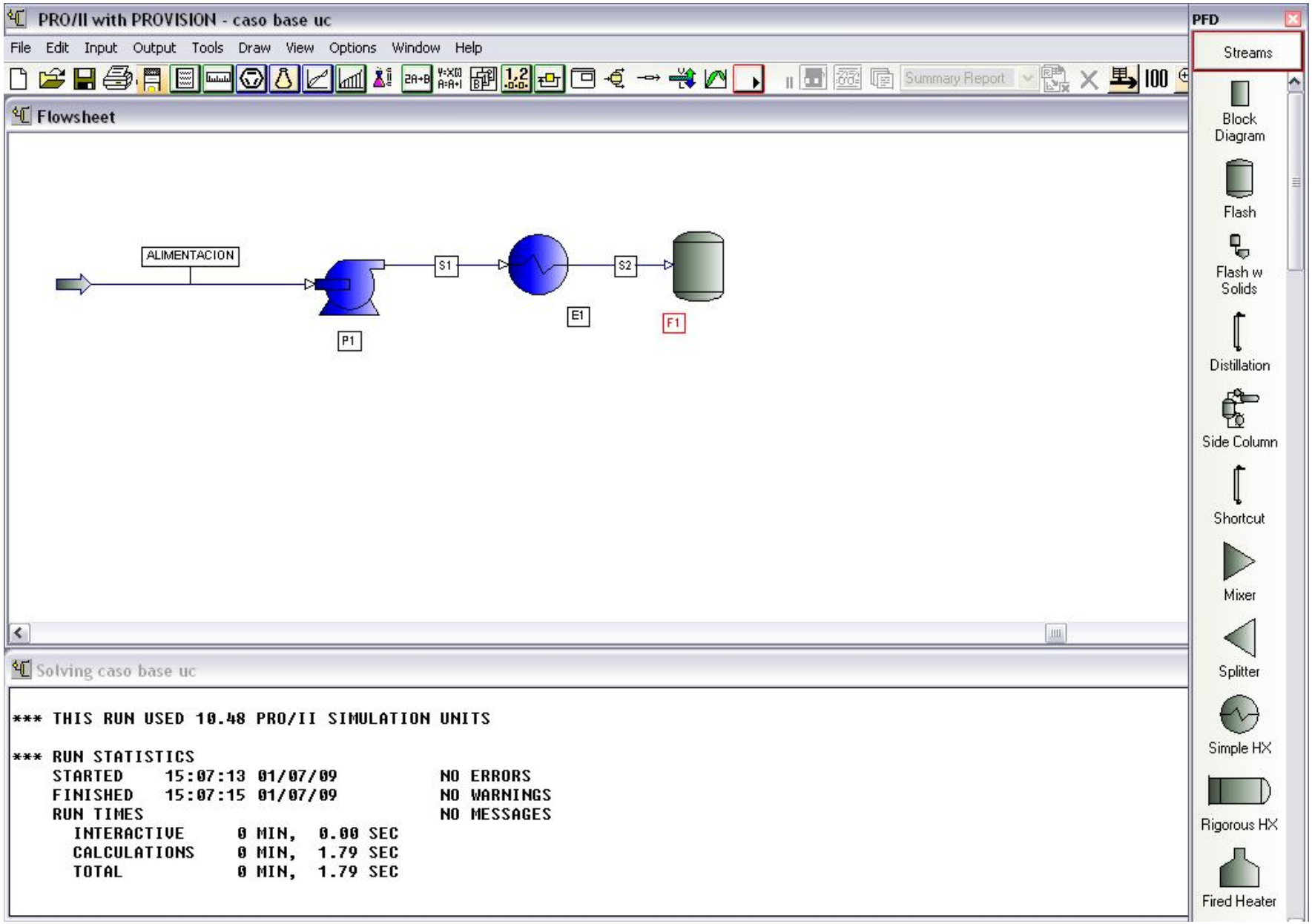

PRO/II with PROVISION - Untitled - [Flowsheet]
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
Heat Exchanger - Specifications
UOM Define Range Help
Specification: Cold Product Temperature
Value: 350 C
Relative Tolerance: 0.000100
Area: ft²
U-Value: BTU/hr-ft²-F
OK
Cancel
Enter the specification value
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

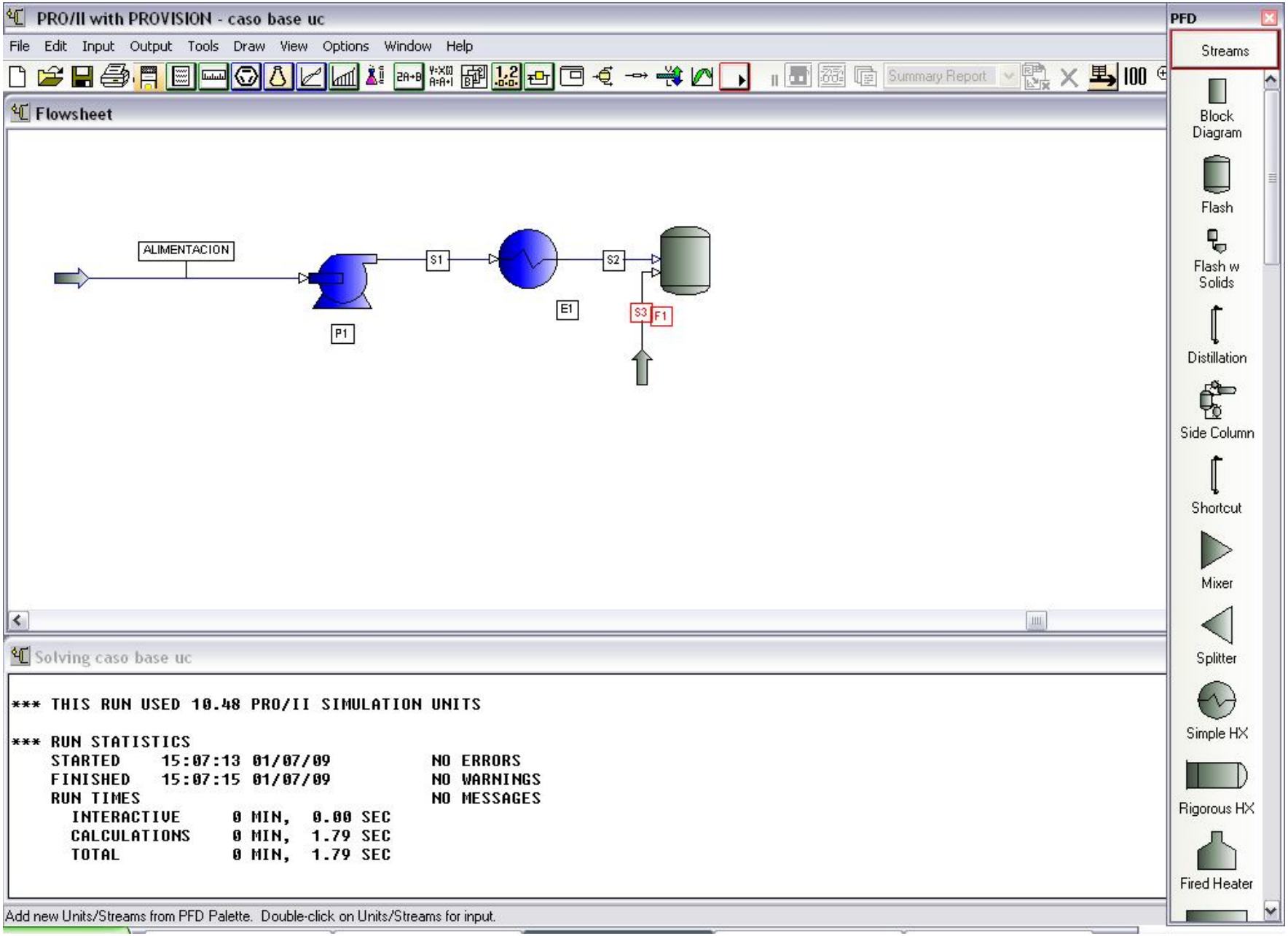

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
S1
S2
P1
E1
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump
caso base uc Solved
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC

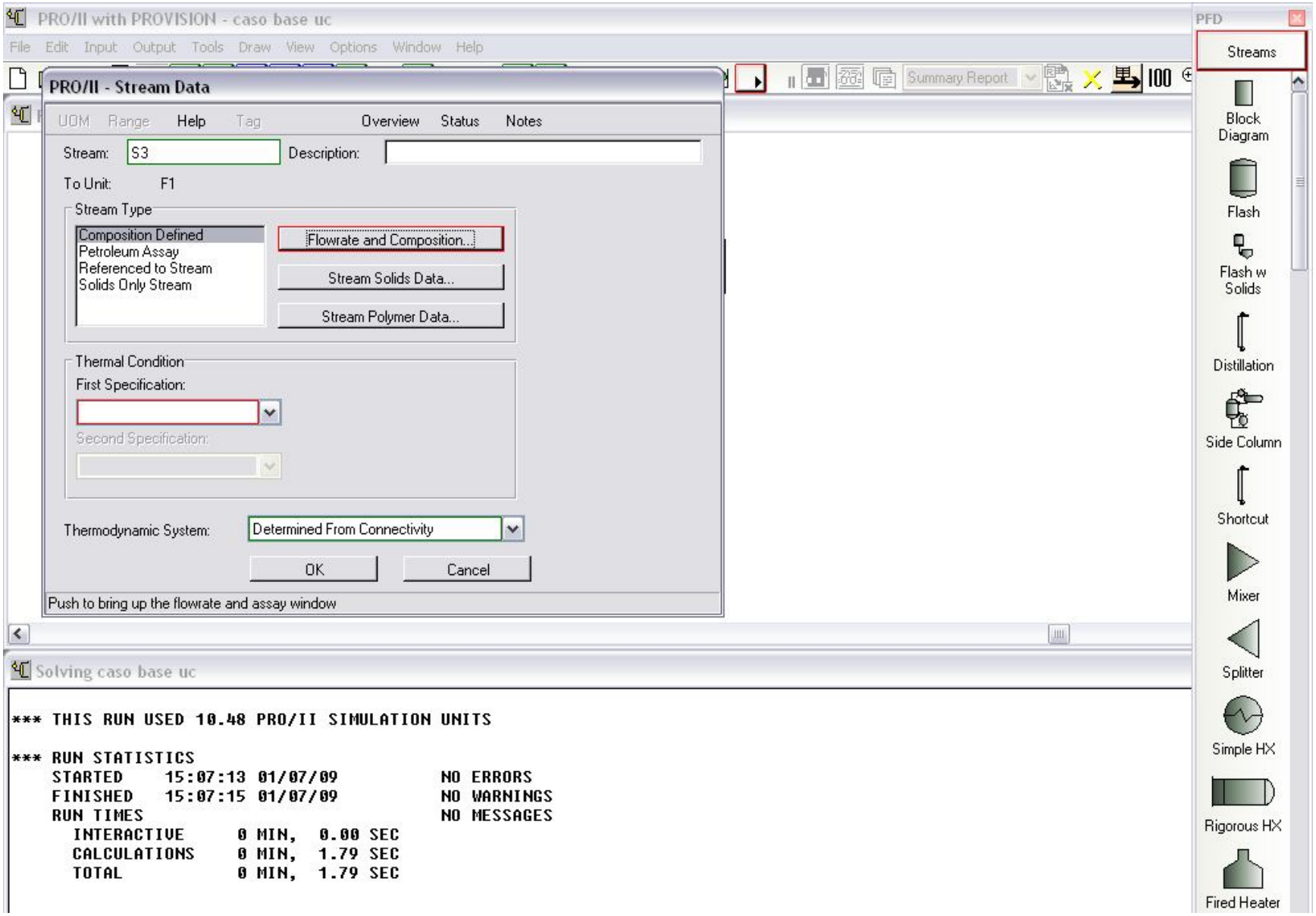

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
S1
S2
Data Review Window
View Results
View Excel Results
Data Entry...
Notes...
Copy
Goto
Break Before
Break After
Collapse
Exclude Unit
Delete
Rotate
Flip
Restore Icon Size
Restore Label Position
Center in View
Lock
Unlock
Display...
Rename...
Add to Active Report
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SI
*** RUN STATISTICS
STARTED 15:07:13 01/07/09
FINISHED 15:07:15 01/07/09
RUN TIMES
INTERACTIVE 0 MIN,
CALCULATIONS 0 MIN,
TOTAL 0 MIN,
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

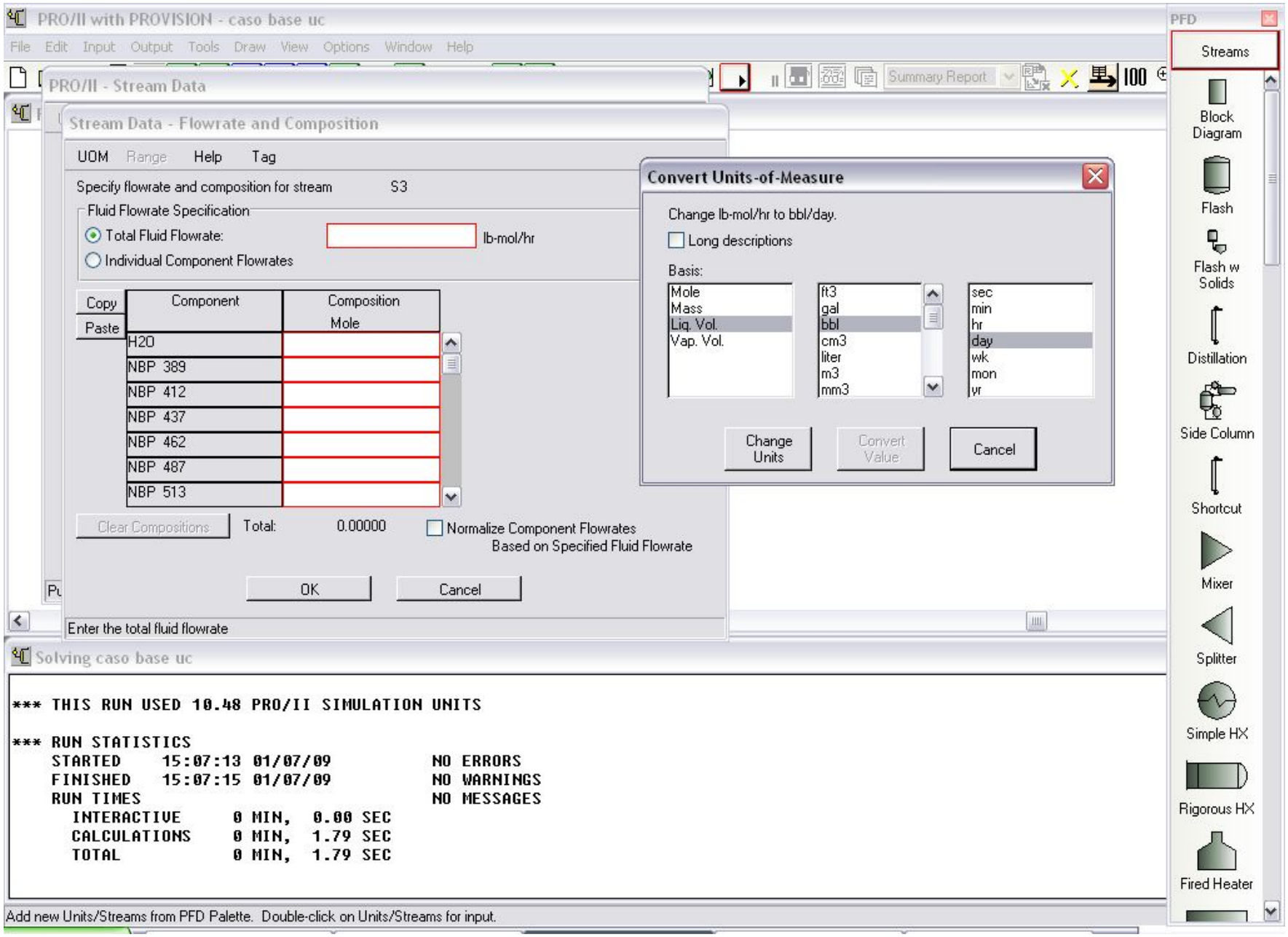

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Programmer's File Editor
File Edit Options Template Execute Macro Window Help
\Documents and Settings\miajaa\Configuración local\Temp\VW155.tmp
Pump 'P1'
Feeds ALIMENTACION
Products S1
User Input Calculated
Temperature, F 356.25
Pressure, PSIA 214.70 214.70
Pressure Rise, PSI 140.00
Work, HP 78.80
Head, FT 354.16
Efficiency 80.00 80.00
Ln 1 Col 1
*** RUN STATISTICS
STARTED 15:07:13 01/07/09
FINISHED 15:07:15 01/07/09
RUN TIMES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
NO ERRORS
NO WARNINGS
NO MESSAGES
PFD
Streams
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Air Cooled HX
LNG HX
Compressor
Expander
Pump

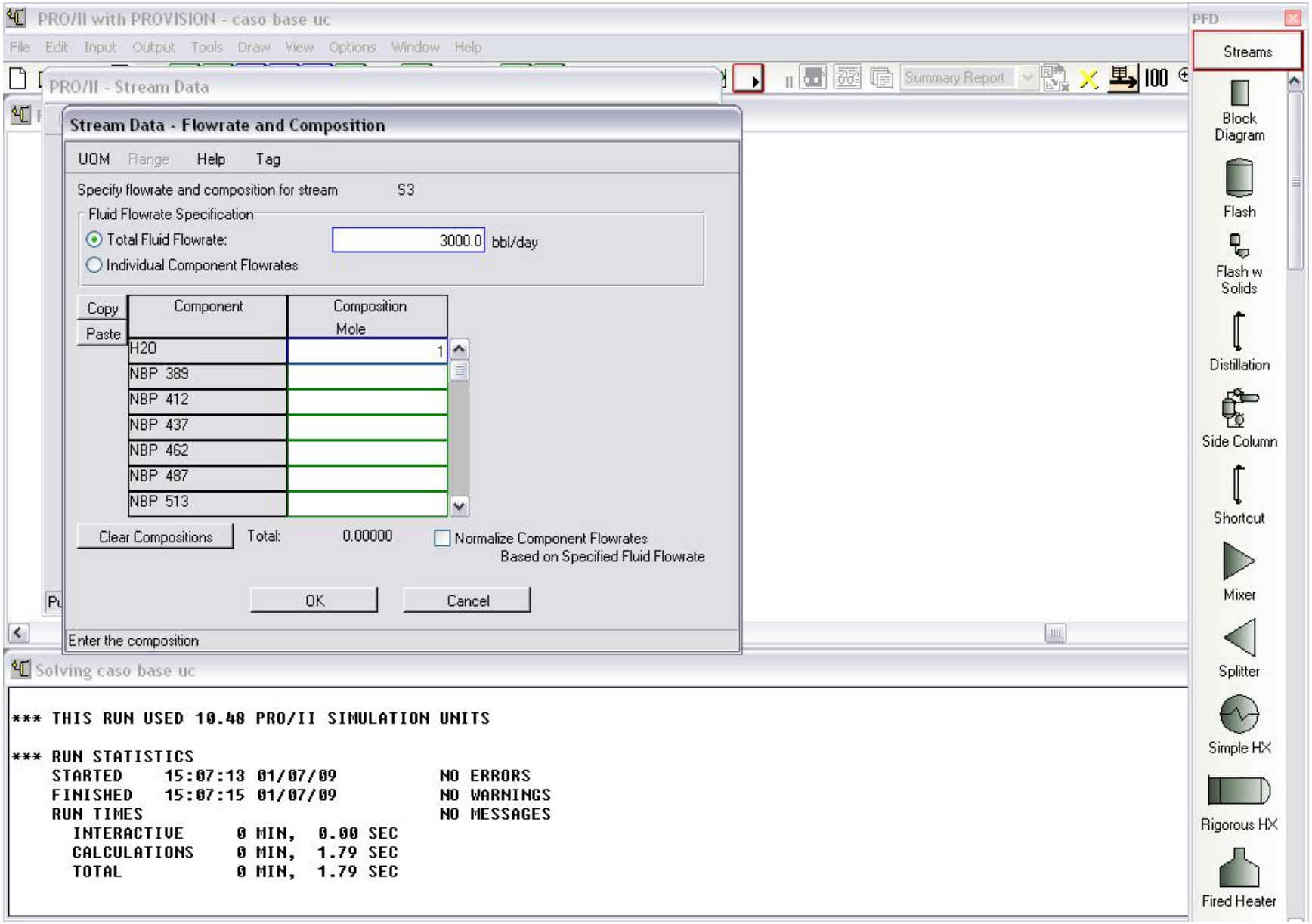

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
S1
S2
P1
E1
F1
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

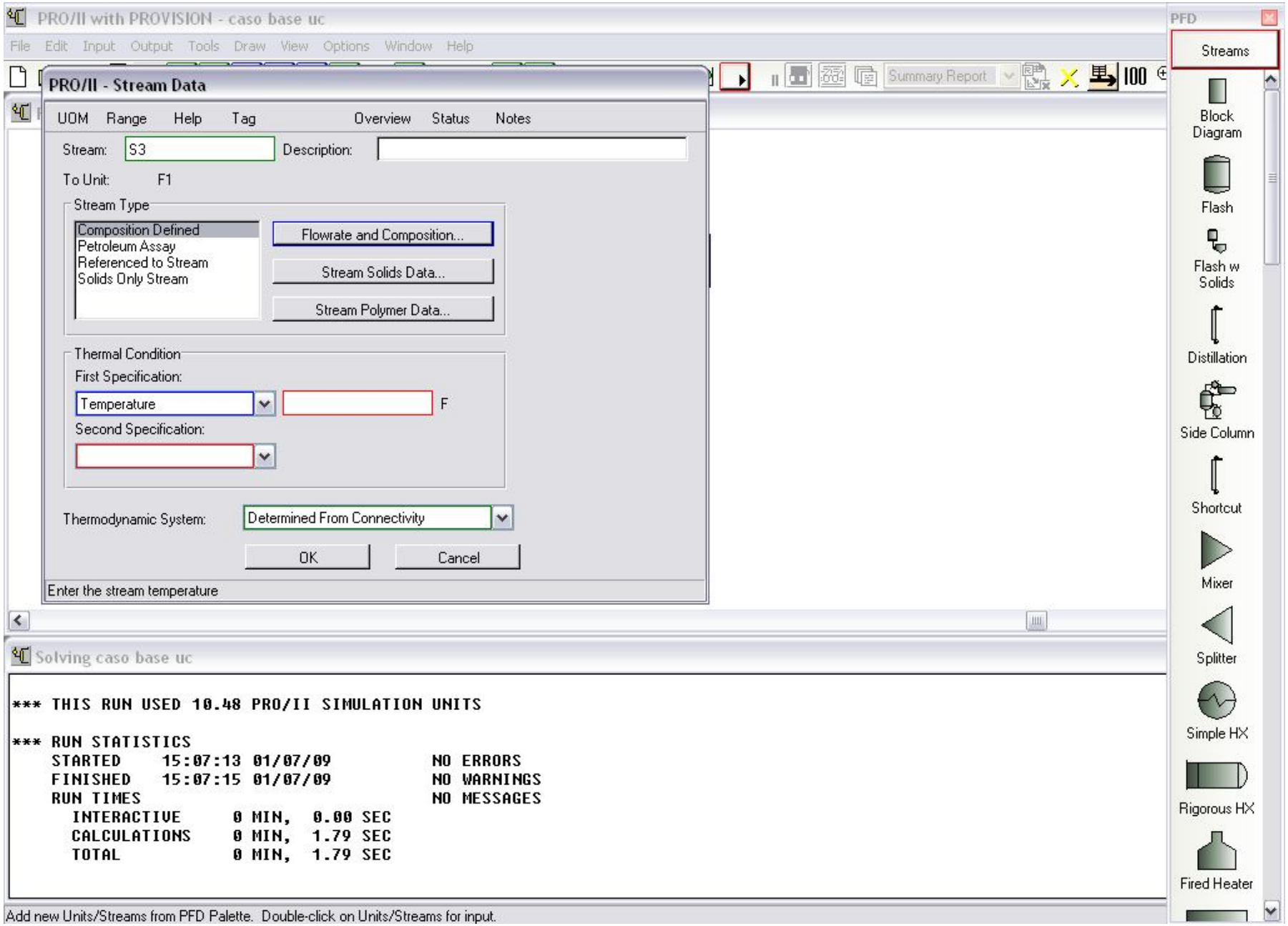

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
S1
S2
P1
E1
F1
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

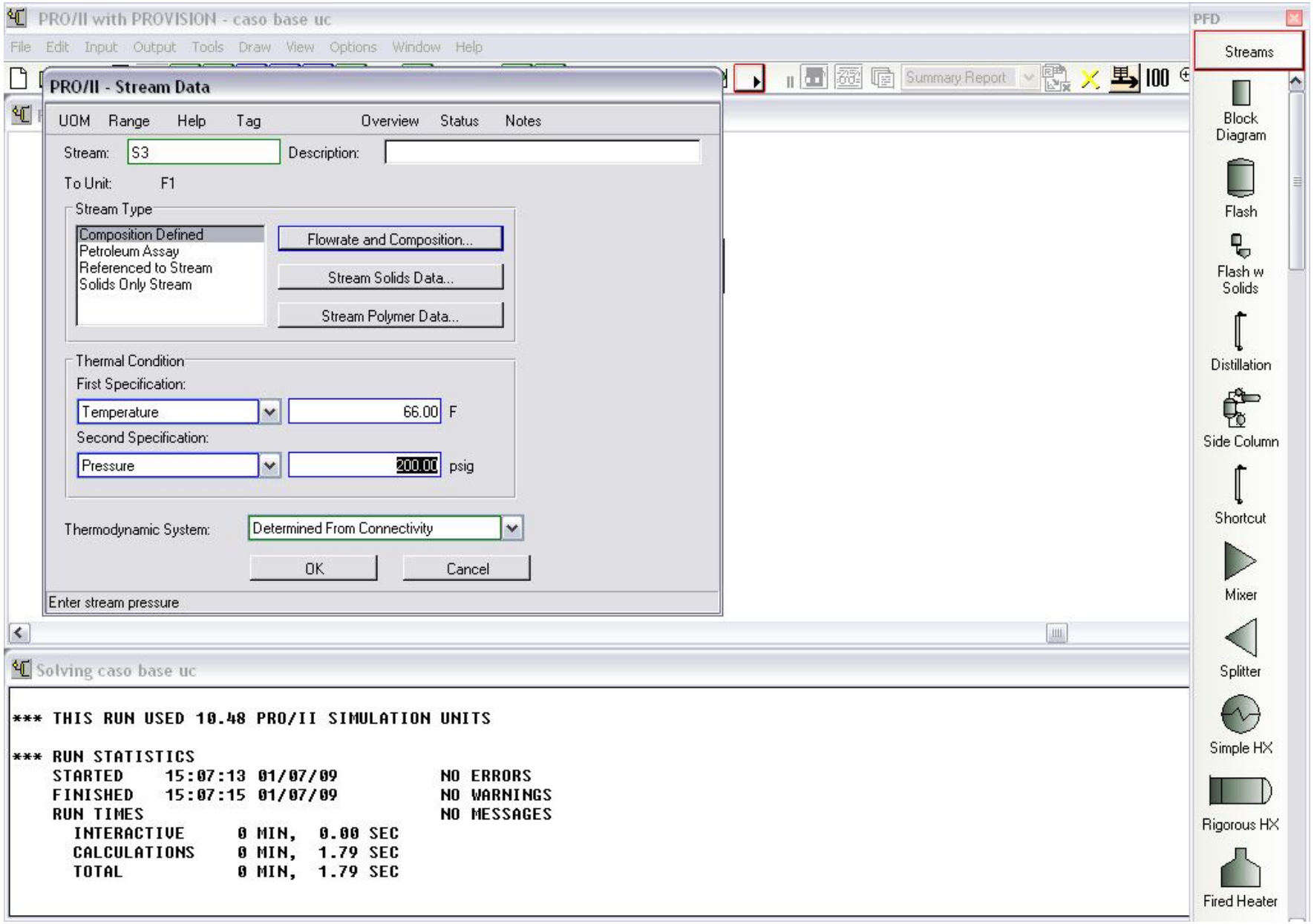

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
S1
S2
S3
F1
P1
E1
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
Add new Units/Streams from PFD Palette. Double-click on Units/Streams for input.
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

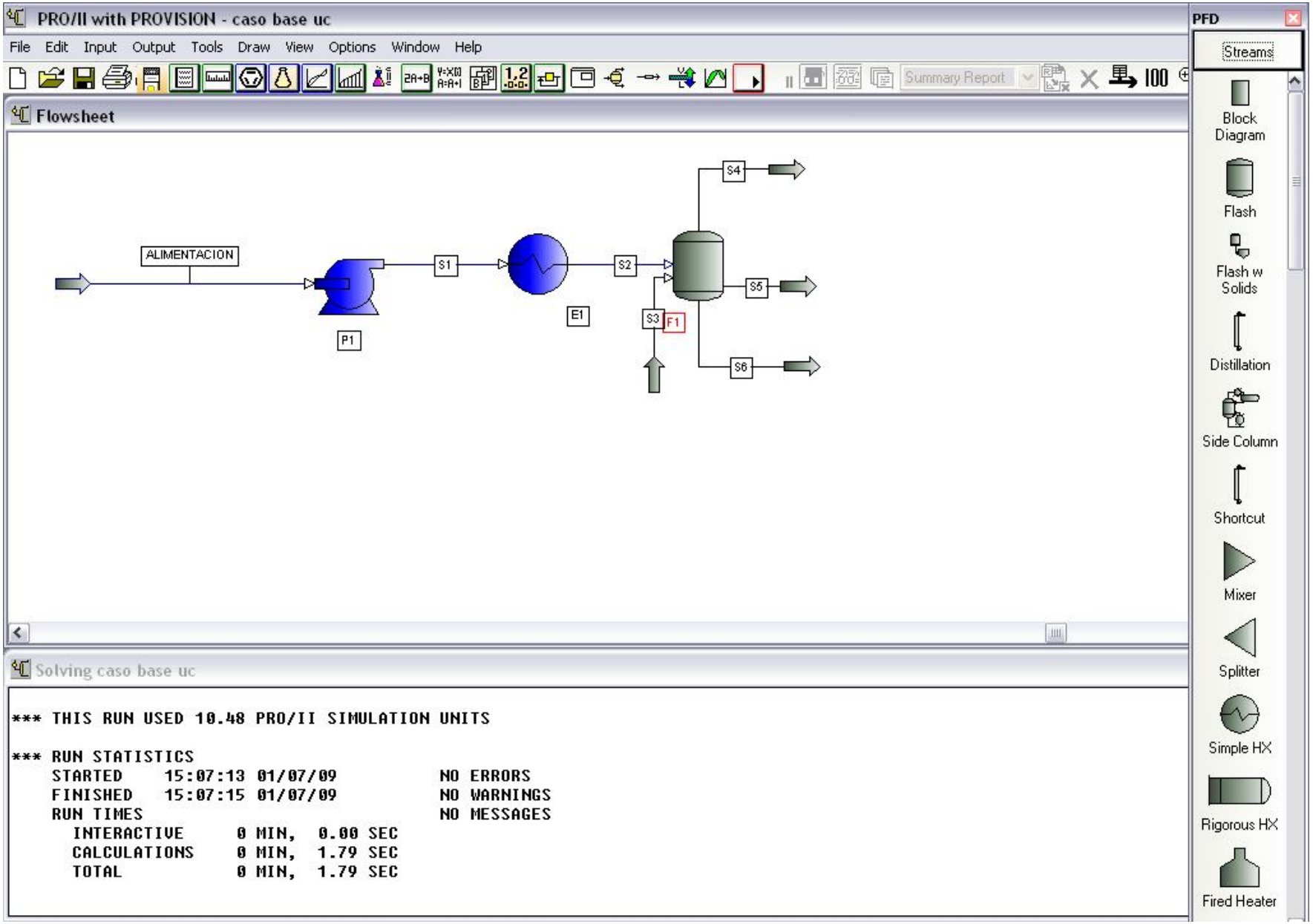

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S3
Description:
To Unit: F1
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Composition...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Second Specification:
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Push to bring up the flowrate and assay window
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

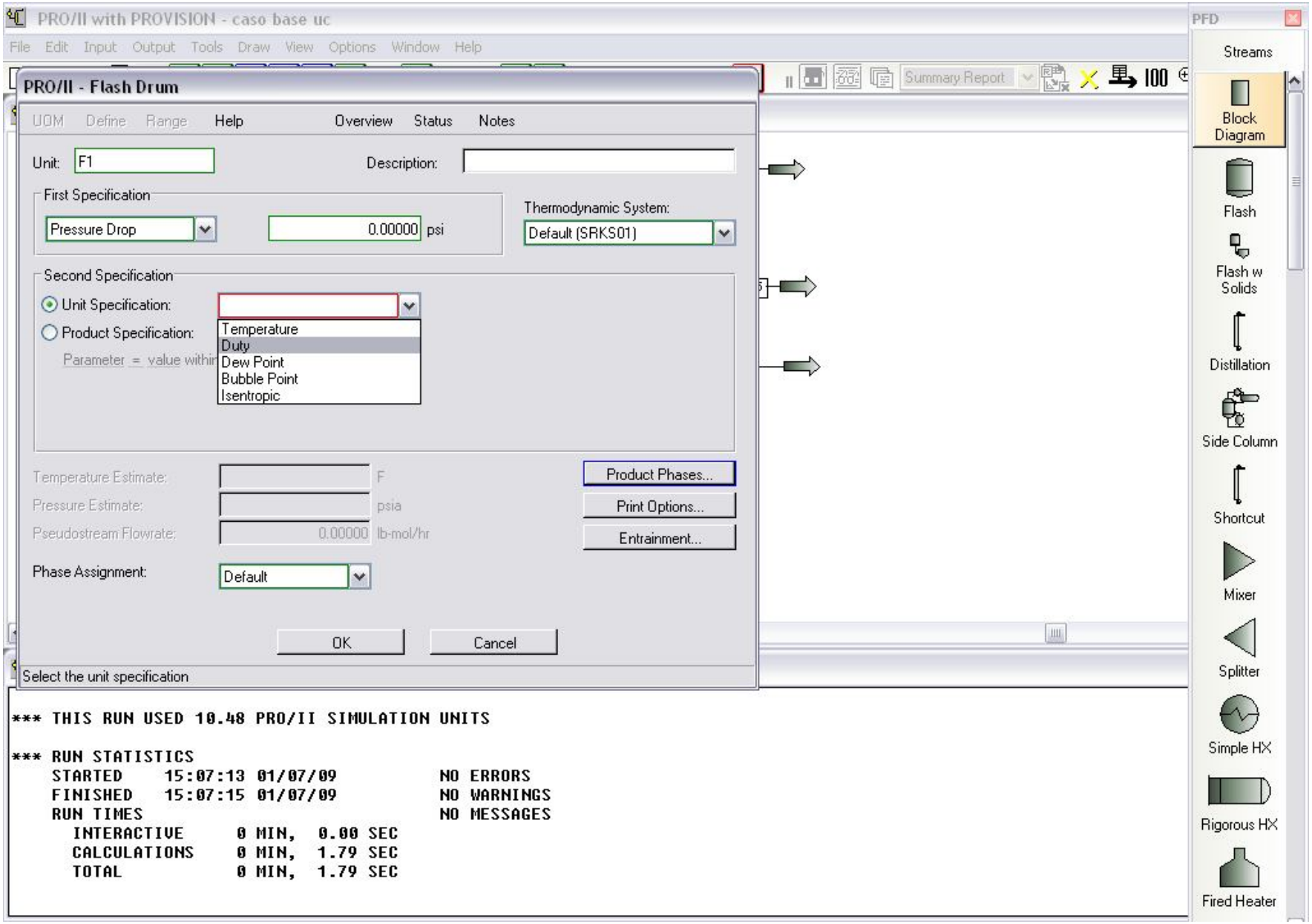

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
Stream Data - Flowrate and Composition
UOM Range Help Tag
Specify flowrate and composition for stream S3
Fluid Flowrate Specification
Total Fluid Flowrate:
lb-mol/hr
Individual Component Flowrates
Copy
Paste
Component
Composition
Mole
H2O
NBP 389
NBP 412
NBP 437
NBP 462
NBP 487
NBP 513
Clear Compositions
Total: 0.00000
Normalize Component Flowrates
Based on Specified Fluid Flowrate
OK
Cancel
Enter the total fluid flowrate
Convert Units-of-Measure
Change lb-mol/hr to bbl/day.
Long descriptions
Basis:
Mole
Mass
Liq. Vol.
Vap. Vol.
ft3
gal
bbl
cm3
liter
m3
mm3
sec
min
hr
day
wk
mon
yr
Change Units
Convert Value
Cancel
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
Add new Units/Streams from PFD Palette. Double-click on Units/Streams for input.

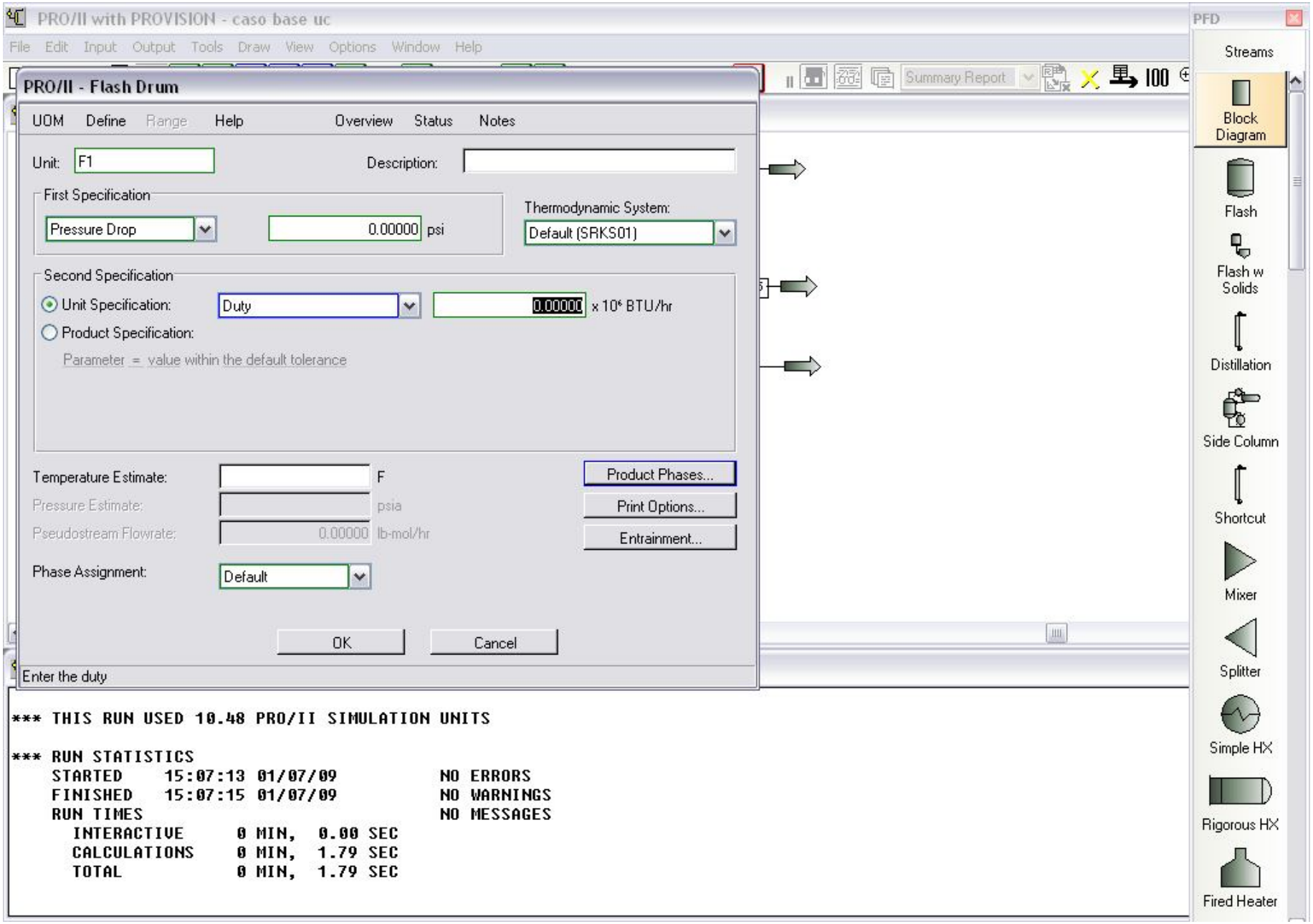

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PRO/II - Stream Data
Stream Data - Flowrate and Composition
UOM Range Help Tag
Specify flowrate and composition for stream S3
Fluid Flowrate Specification
Total Fluid Flowrate: 3000.0 bbl/day
Individual Component Flowrates
Copy
Paste
Component
Composition Mole
H2O 1
NBP 389
NBP 412
NBP 437
NBP 462
NBP 487
NBP 513
Clear Compositions
Total: 0.00000
Normalize Component Flowrates Based on Specified Fluid Flowrate
OK
Cancel
Enter the composition
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

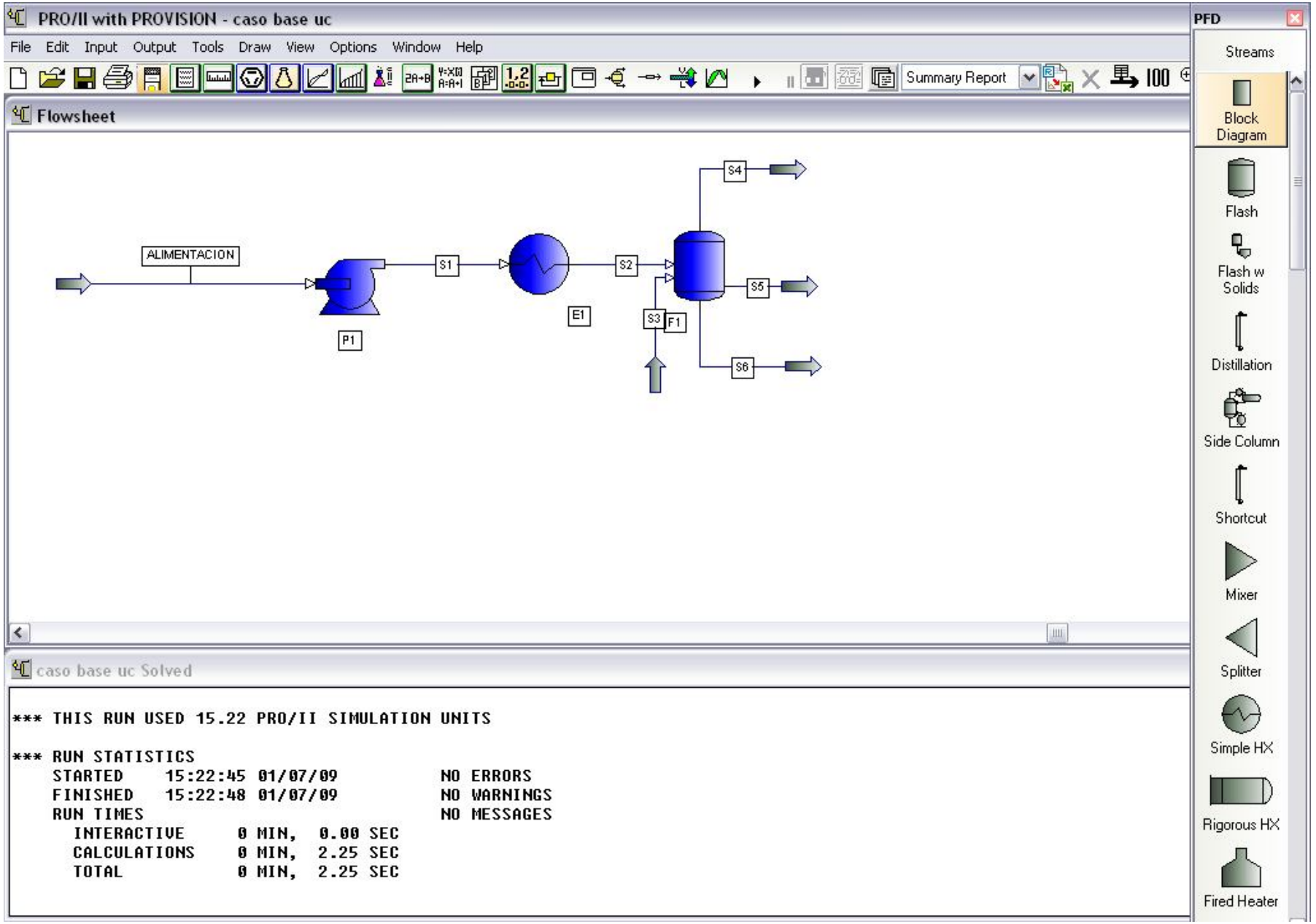

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S3
Description:
To Unit: F1
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Composition...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Temperature
F
Second Specification:
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Enter the stream temperature
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
Add new Units/Streams from PFD Palette. Double-click on Units/Streams for input.
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

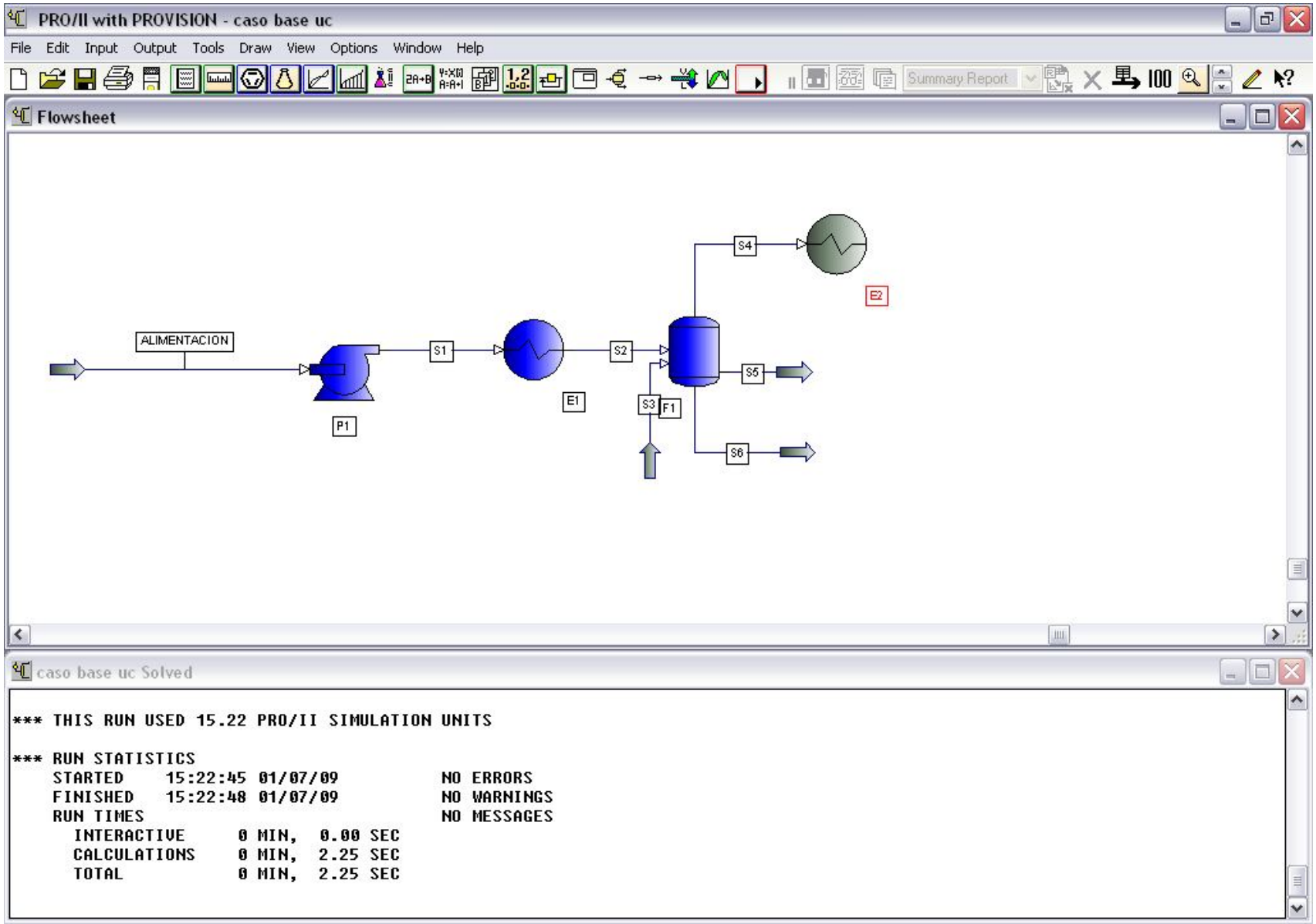

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S3
Description:
To Unit: F1
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Composition...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Temperature
66.00 F
Second Specification:
Pressure
200.00 psig
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Enter stream pressure
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

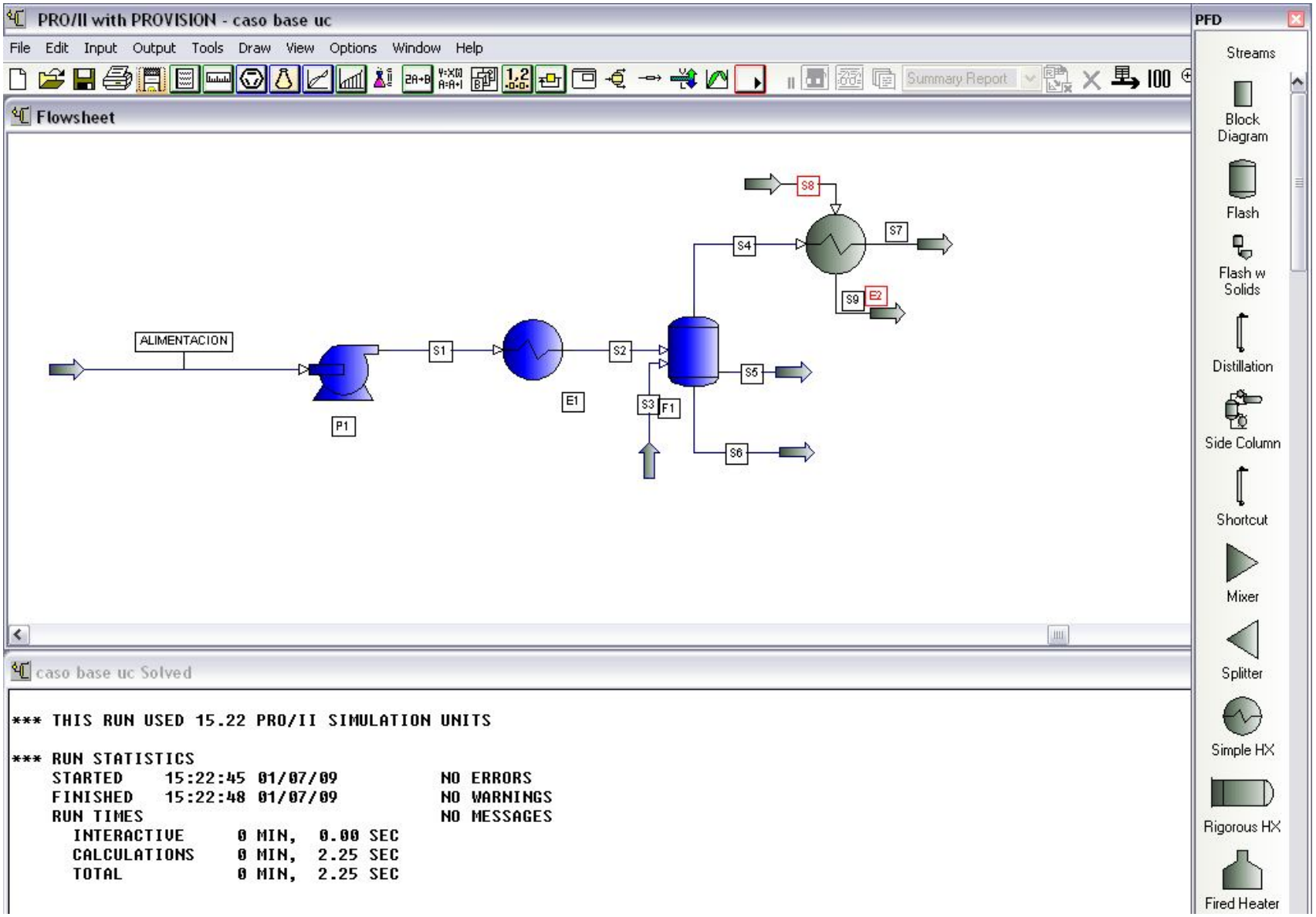

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
P1
S1
E1
S2
S3
F1
S4
S5
S6
Solving caso base uc
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

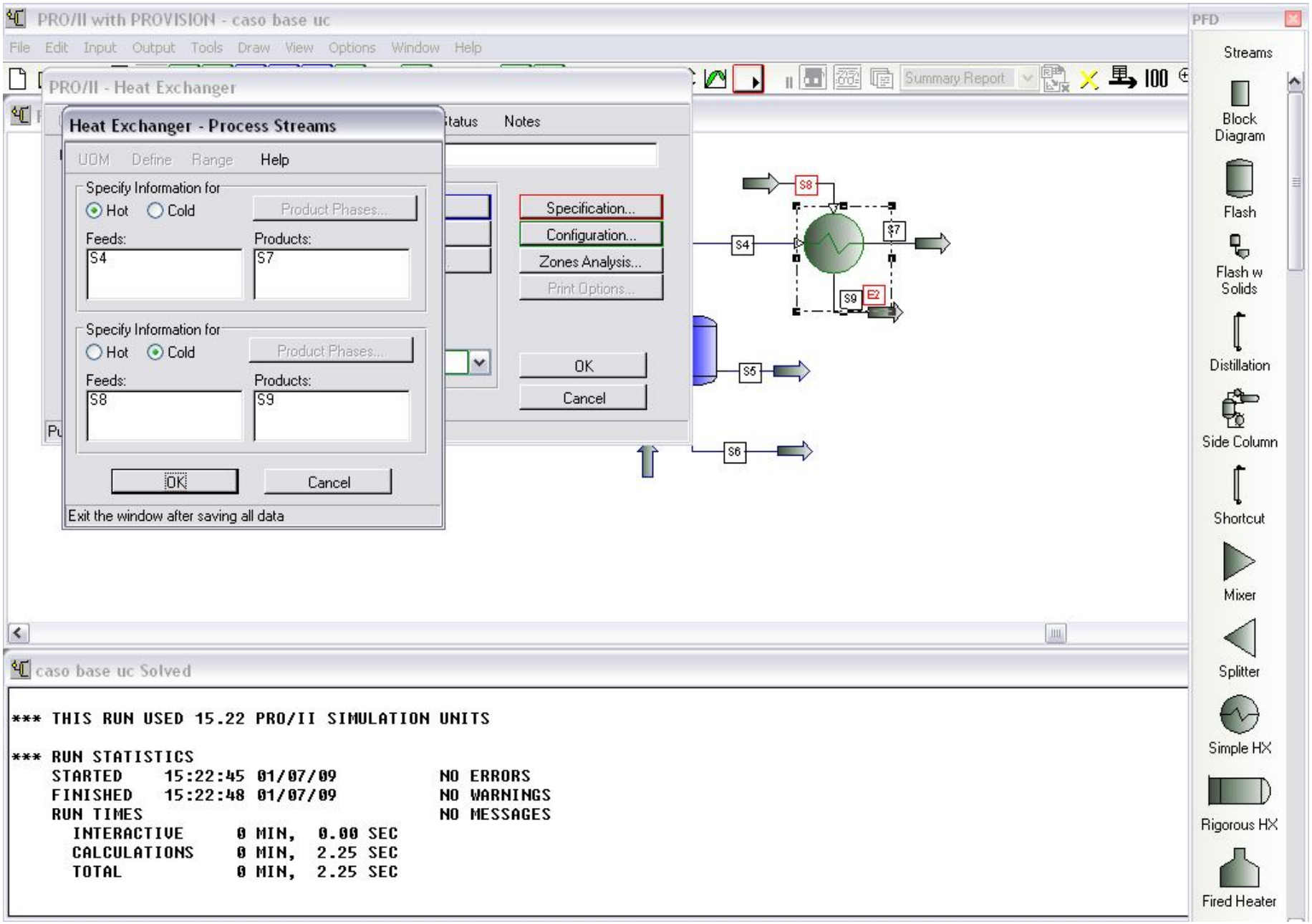

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
PRO/II - Flash Drum
UOM Define Range Help Overview Status Notes
Unit: F1
Description:
First Specification
Pressure Drop
0.00000 psi
Thermodynamic System:
Default (SRKS01)
Second Specification
Unit Specification:
Product Specification:
Parameter = value within
Temperature
Duty
Dew Point
Bubble Point
Isentropic
Temperature Estimate:
F
Pressure Estimate:
psia
Pseudostream Flowrate:
0.00000 lb-mol/hr
Product Phases...
Print Options...
Entrainment...
Phase Assignment:
Default
OK
Cancel
Select the unit specification
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

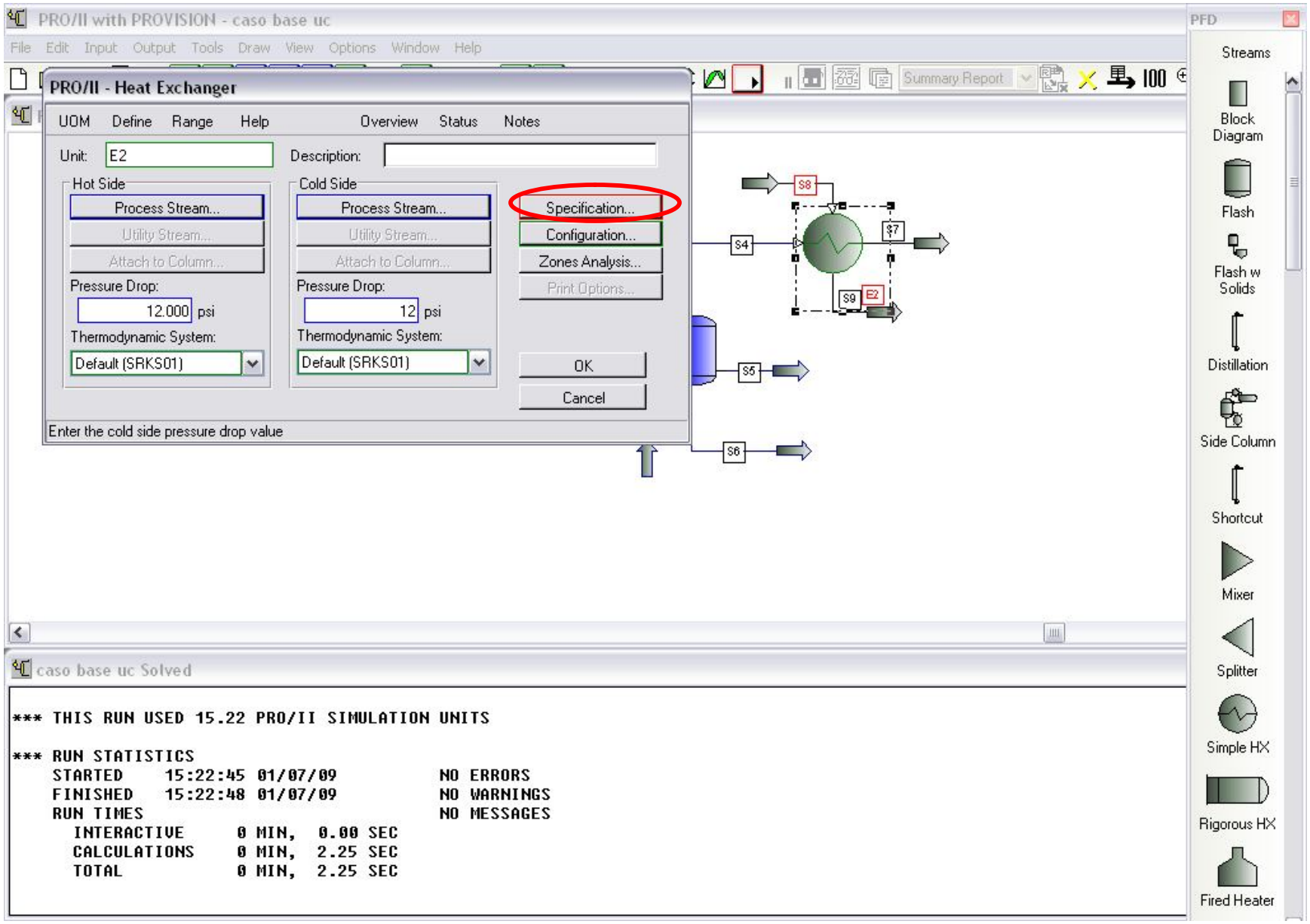

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
PRO/II - Flash Drum
UOM Define Range Help Overview Status Notes
Unit: F1
Description:
First Specification
Pressure Drop
0.00000 psi
Thermodynamic System:
Default (SRKS01)
Second Specification
Unit Specification:
Duty
0.00000 x 10⁶ BTU/hr
Product Specification:
Parameter = value within the default tolerance
Temperature Estimate:
F
Pressure Estimate:
psia
Pseudostream Flowrate:
0.00000 lb-mol/hr
Phase Assignment:
Default
Product Phases...
Print Options...
Entrainment...
OK
Cancel
Enter the duty
*** THIS RUN USED 10.48 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:07:13 01/07/09 NO ERRORS
FINISHED 15:07:15 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.79 SEC
TOTAL 0 MIN, 1.79 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

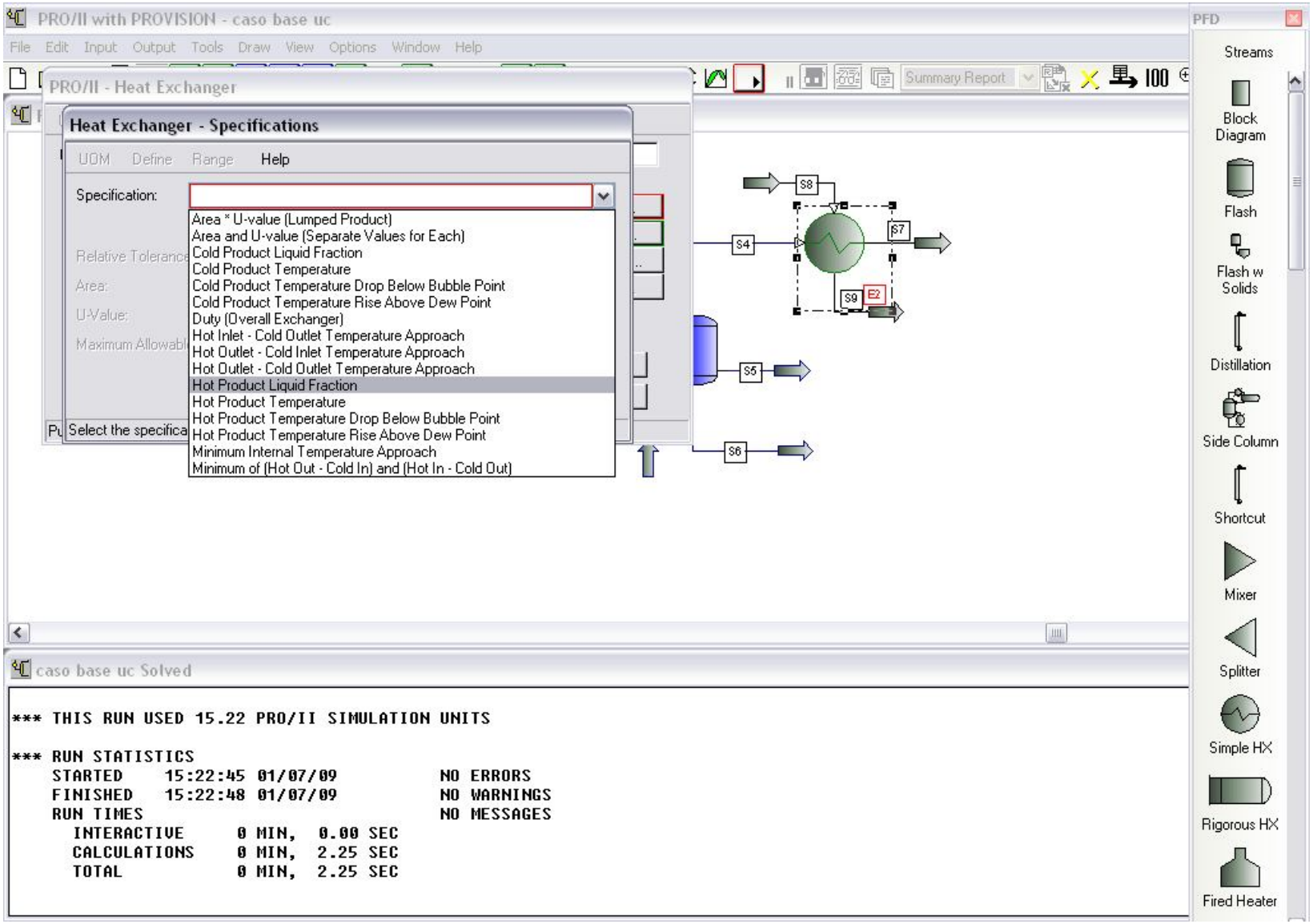

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
P1
S1
E1
S2
S3
F1
S4
S5
S6
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

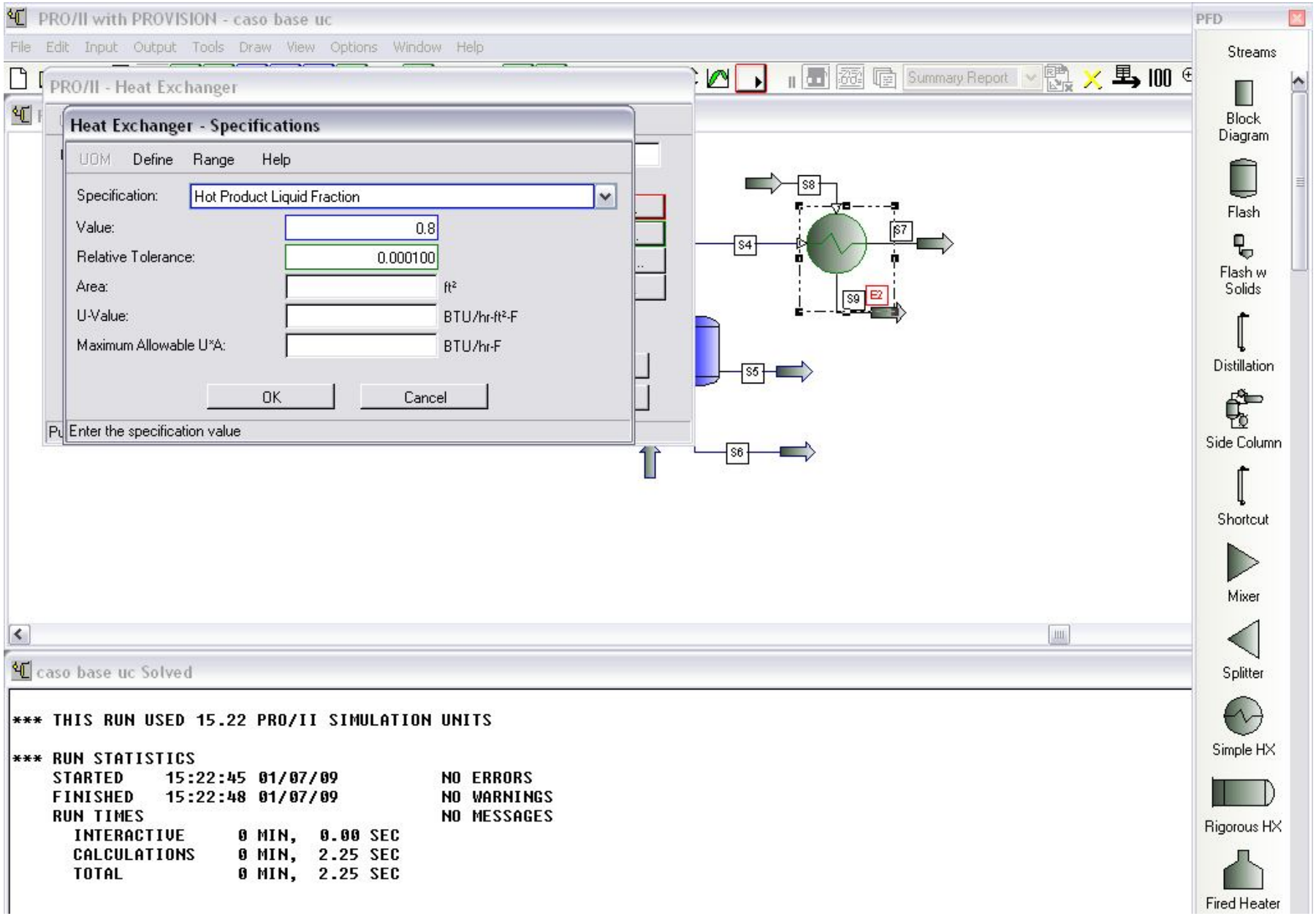

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
P1
S1
E1
S2
S3
F1
S4
E2
S5
S6
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC

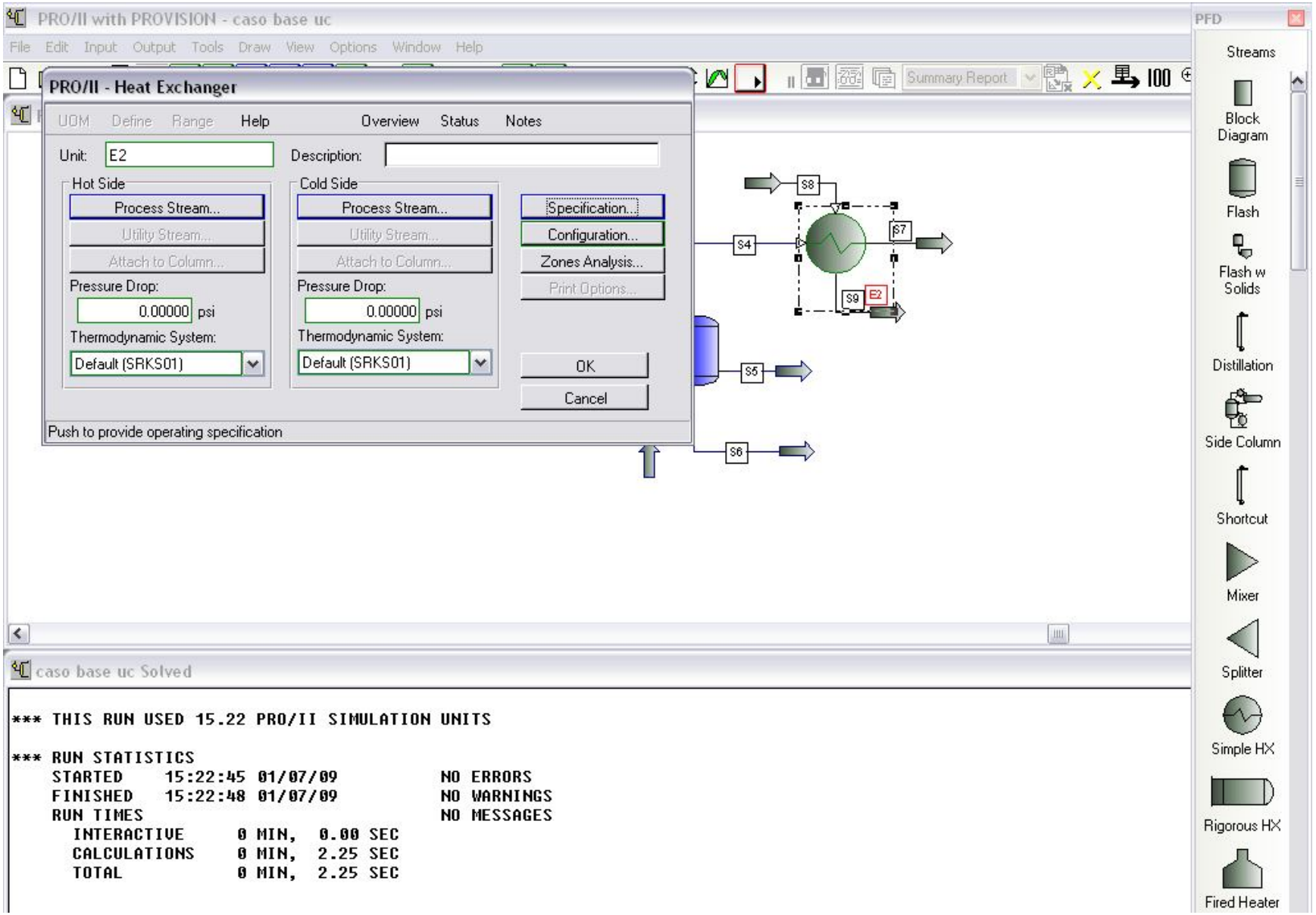

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
P1
S1
E1
S2
S3
F1
S4
S5
S6
S7
S8
S9
E2
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater

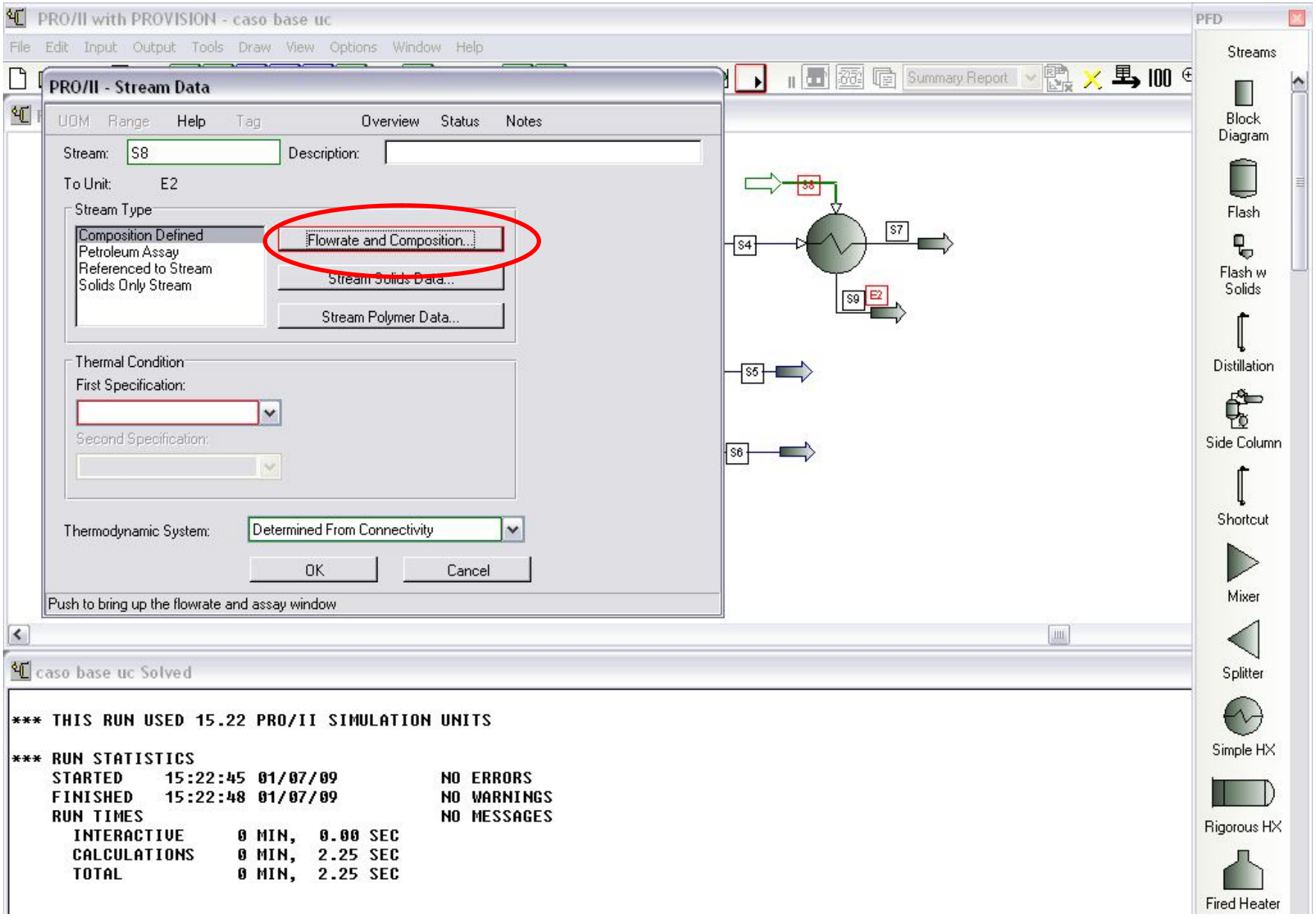

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
Heat Exchanger - Process Streams
UOM Define Range Help
Specify Information for
Hot Cold
Product Phases...
Feeds:
Products:
S4
S7
Specify Information for
Hot Cold
Product Phases...
Feeds:
Products:
S8
S9
OK
Cancel
Exit the window after saving all data
Status Notes
Specification...
Configuration...
Zones Analysis...
Print Options...
OK
Cancel
S8
S4
S7
S9
E2
S5
S6
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC

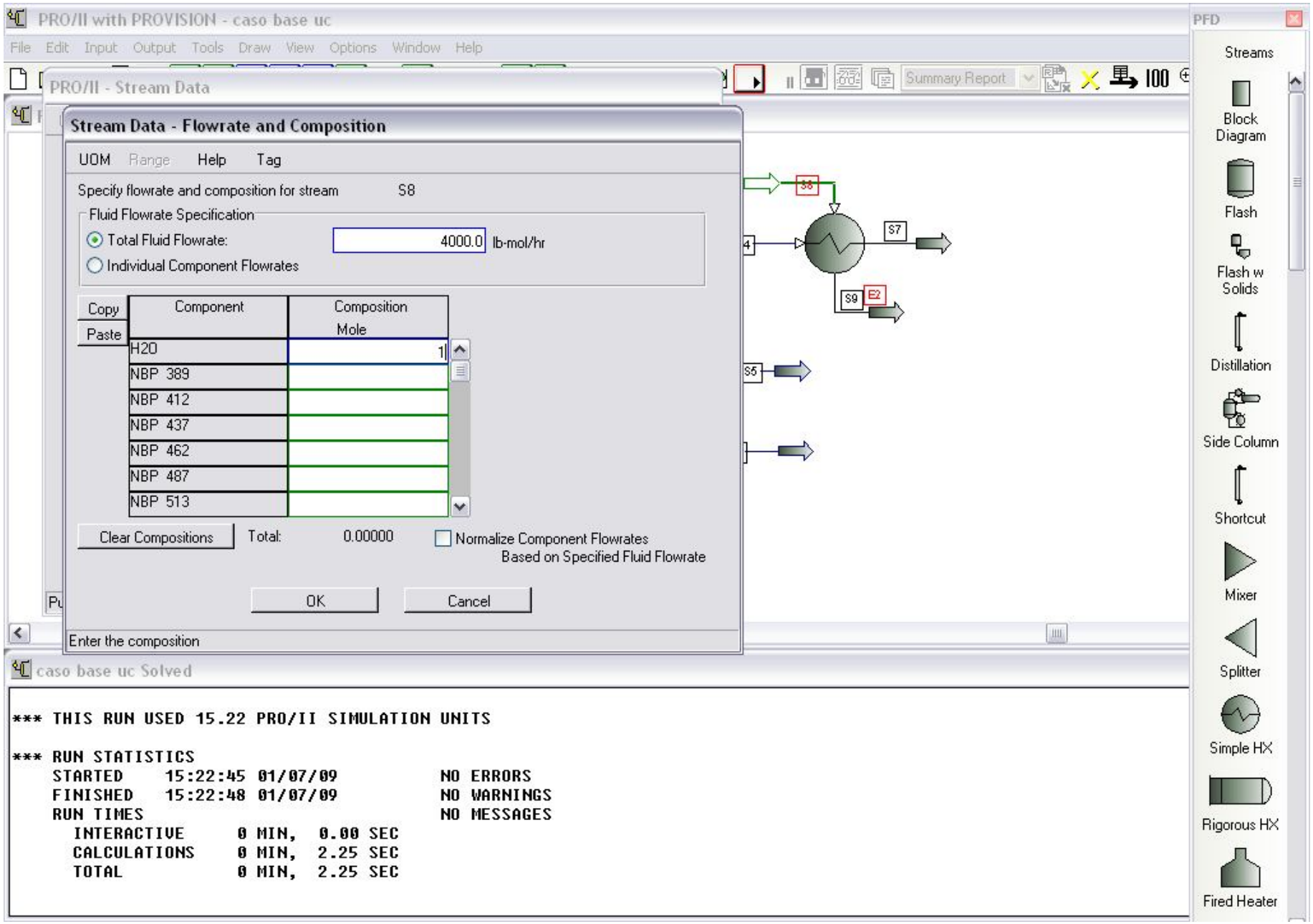

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
UOM Define Range Help
Overview Status Notes
Unit: E2
Description:
Hot Side
Process Stream...
Utility Stream...
Attach to Column...
Pressure Drop:
12.000 psi
Thermodynamic System:
Default (SRKS01)
Cold Side
Process Stream...
Utility Stream...
Attach to Column...
Pressure Drop:
12 psi
Thermodynamic System:
Default (SRKS01)
Specification...
Configuration...
Zones Analysis...
Print Options...
OK
Cancel
Enter the cold side pressure drop value
S8
S4
S7
S9
E2
S5
S6
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC

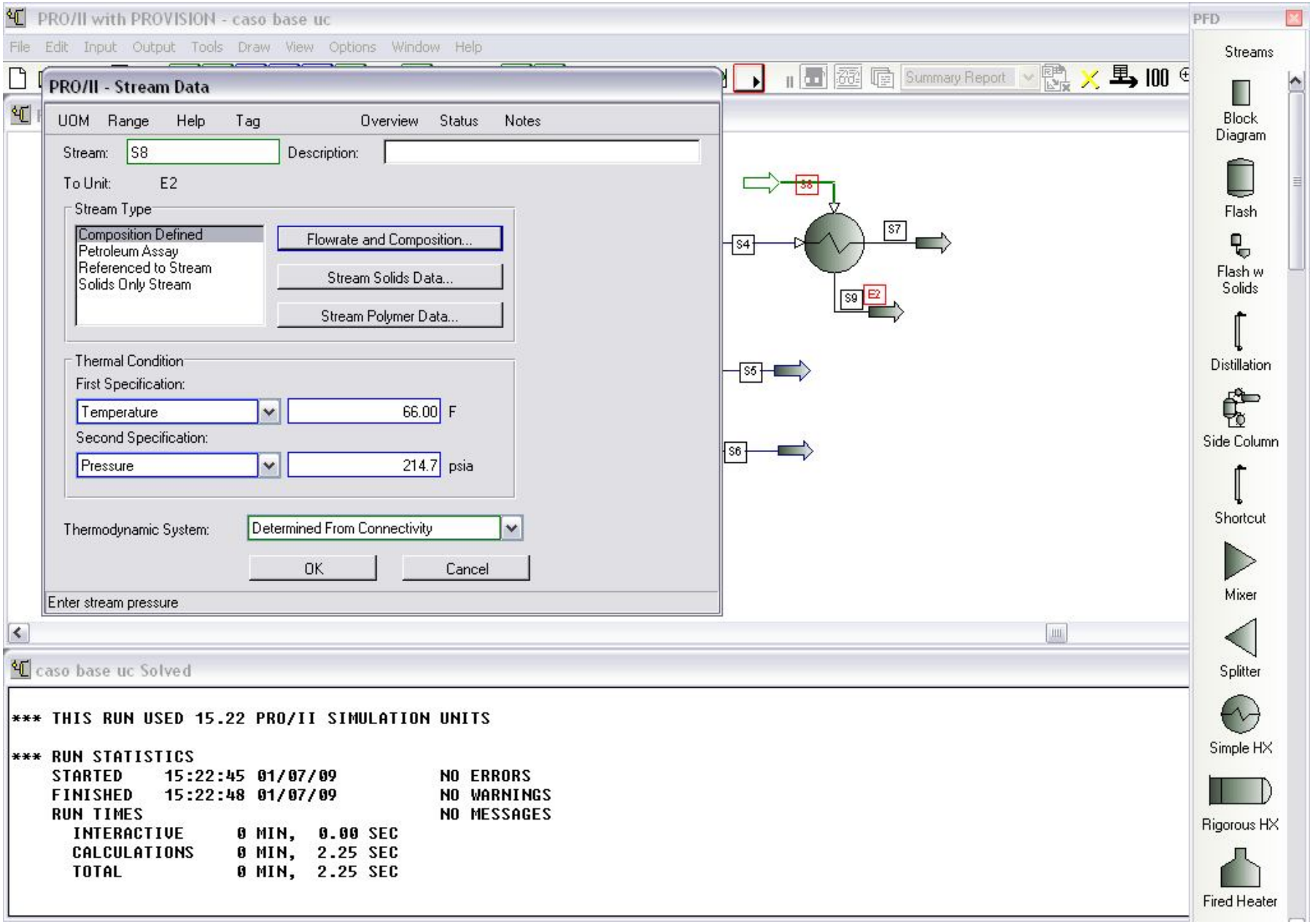

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
Heat Exchanger - Specifications
UOM Define Range Help
Specification:
Area * U-value (Lumped Product)
Area and U-value (Separate Values for Each)
Cold Product Liquid Fraction
Cold Product Temperature
Cold Product Temperature Drop Below Bubble Point
Cold Product Temperature Rise Above Dew Point
Duty (Overall Exchanger)
Hot Inlet - Cold Outlet Temperature Approach
Hot Outlet - Cold Inlet Temperature Approach
Hot Outlet - Cold Outlet Temperature Approach
Hot Product Liquid Fraction
Hot Product Temperature
Hot Product Temperature Drop Below Bubble Point
Hot Product Temperature Rise Above Dew Point
Minimum Internal Temperature Approach
Minimum of (Hot Out - Cold In) and (Hot In - Cold Out)
Relative Tolerance
Area:
U-Value:
Maximum Allowabl
Select the specifica
S8
S4
S7
S9
E2
S5
S6
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC

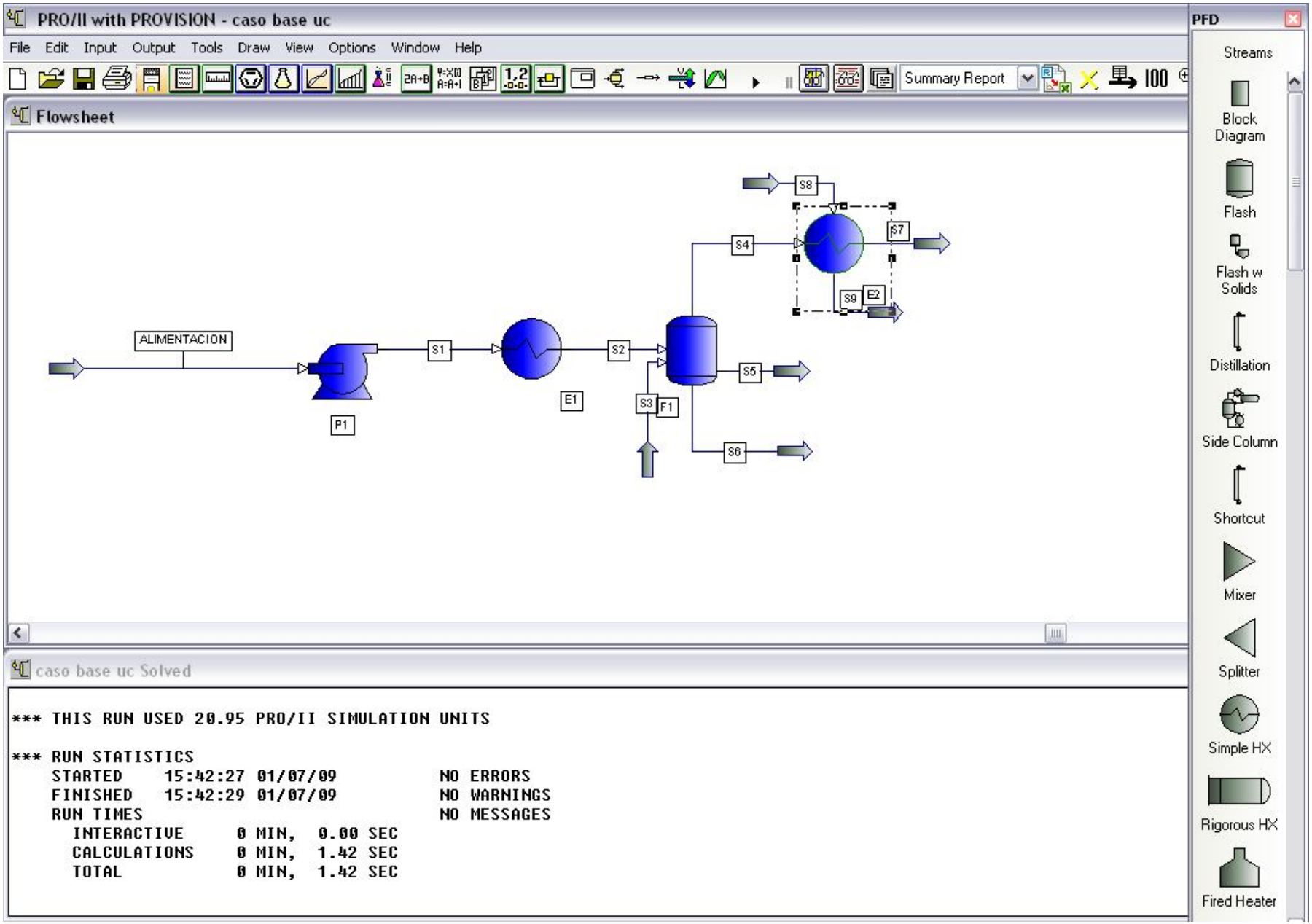

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
Heat Exchanger - Specifications
UOM Define Range Help
Specification: Hot Product Liquid Fraction
Value: 0.8
Relative Tolerance: 0.000100
Area: ft²
U-Value: BTU/hr-ft²-F
Maximum Allowable U*A: BTU/hr-F
OK
Cancel
Enter the specification value
S8
S4
S7
S9
E2
S5
S6
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC

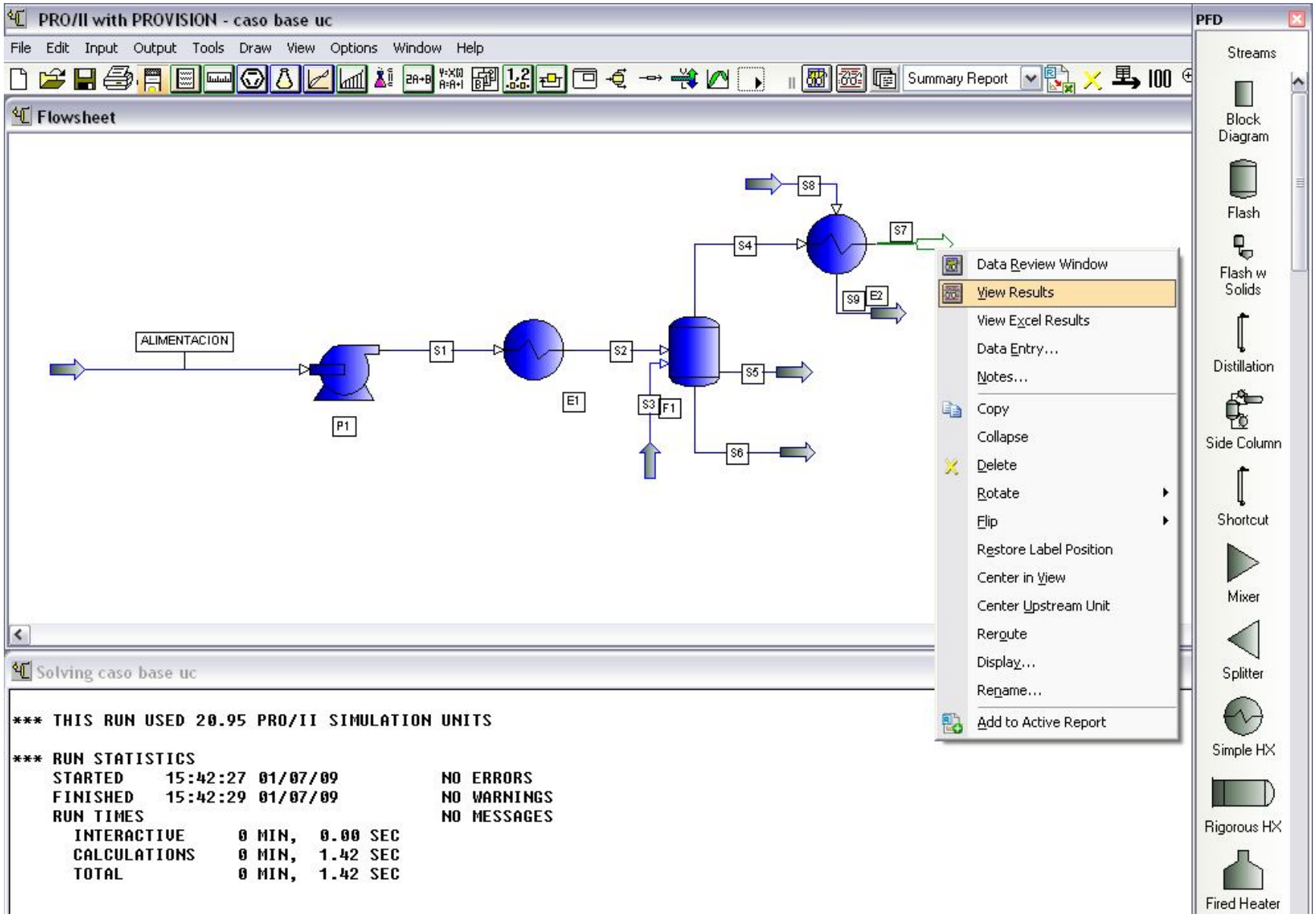

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Heat Exchanger
UOM Define Range Help Overview Status Notes
Unit: E2
Description:
Hot Side
Process Stream...
Utility Stream...
Attach to Column...
Pressure Drop:
0.00000 psi
Thermodynamic System:
Default (SRKS01)
Cold Side
Process Stream...
Utility Stream...
Attach to Column...
Pressure Drop:
0.00000 psi
Thermodynamic System:
Default (SRKS01)
Specification...
Configuration...
Zones Analysis...
Print Options...
OK
Cancel
Push to provide operating specification
S8
S4
S7
S9
E2
S5
S6
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC

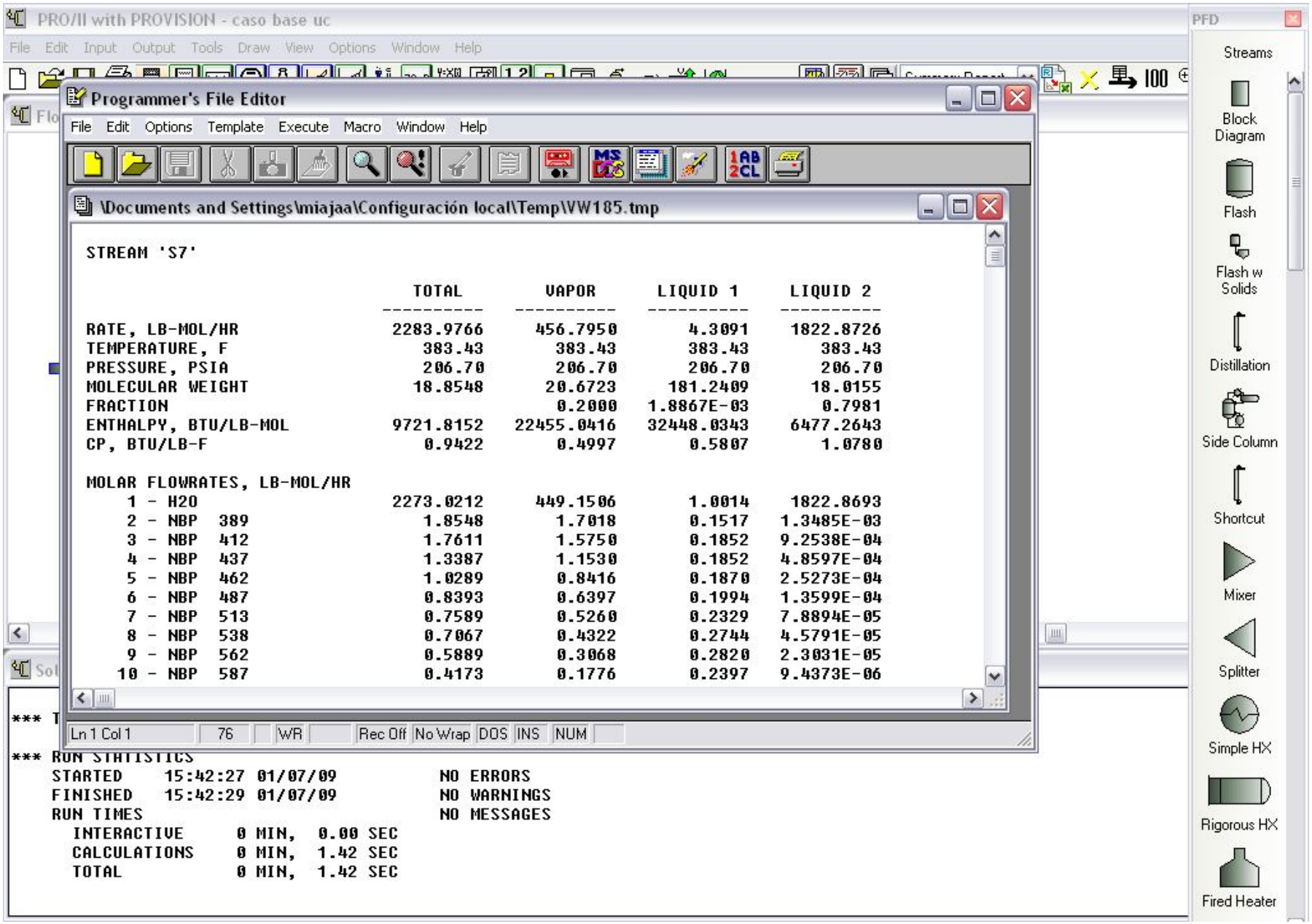

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S8
Description:
To Unit: E2
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Composition...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Second Specification:
Thermodynamic System: Determined From Connectivity
OK
Cancel
Push to bring up the flowrate and assay window
S8
S4
S7
S9
E2
S5
S6
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC

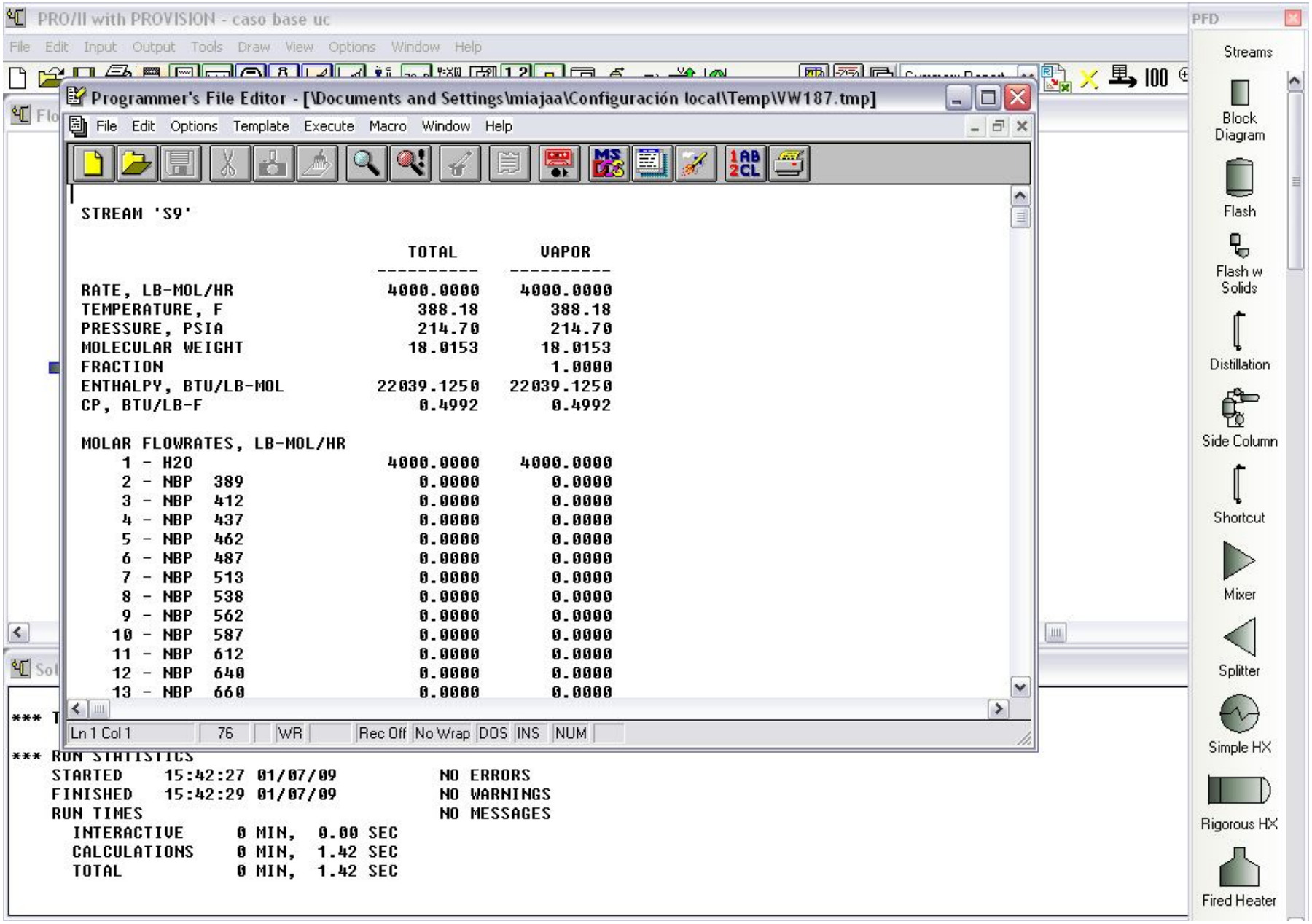

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
100
PRO/II - Stream Data
Stream Data - Flowrate and Composition
UOM Range Help Tag
Specify flowrate and composition for stream S8
Fluid Flowrate Specification
Total Fluid Flowrate: 4000.0 lb-mol/hr
Individual Component Flowrates
Copy
Paste
Component
Composition
Mole
H2O 1
NBP 389
NBP 412
NBP 437
NBP 462
NBP 487
NBP 513
Clear Compositions
Total: 0.00000
Normalize Component Flowrates
Based on Specified Fluid Flowrate
OK
Cancel
Enter the composition
S8
S7
S9
E2
S5
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC

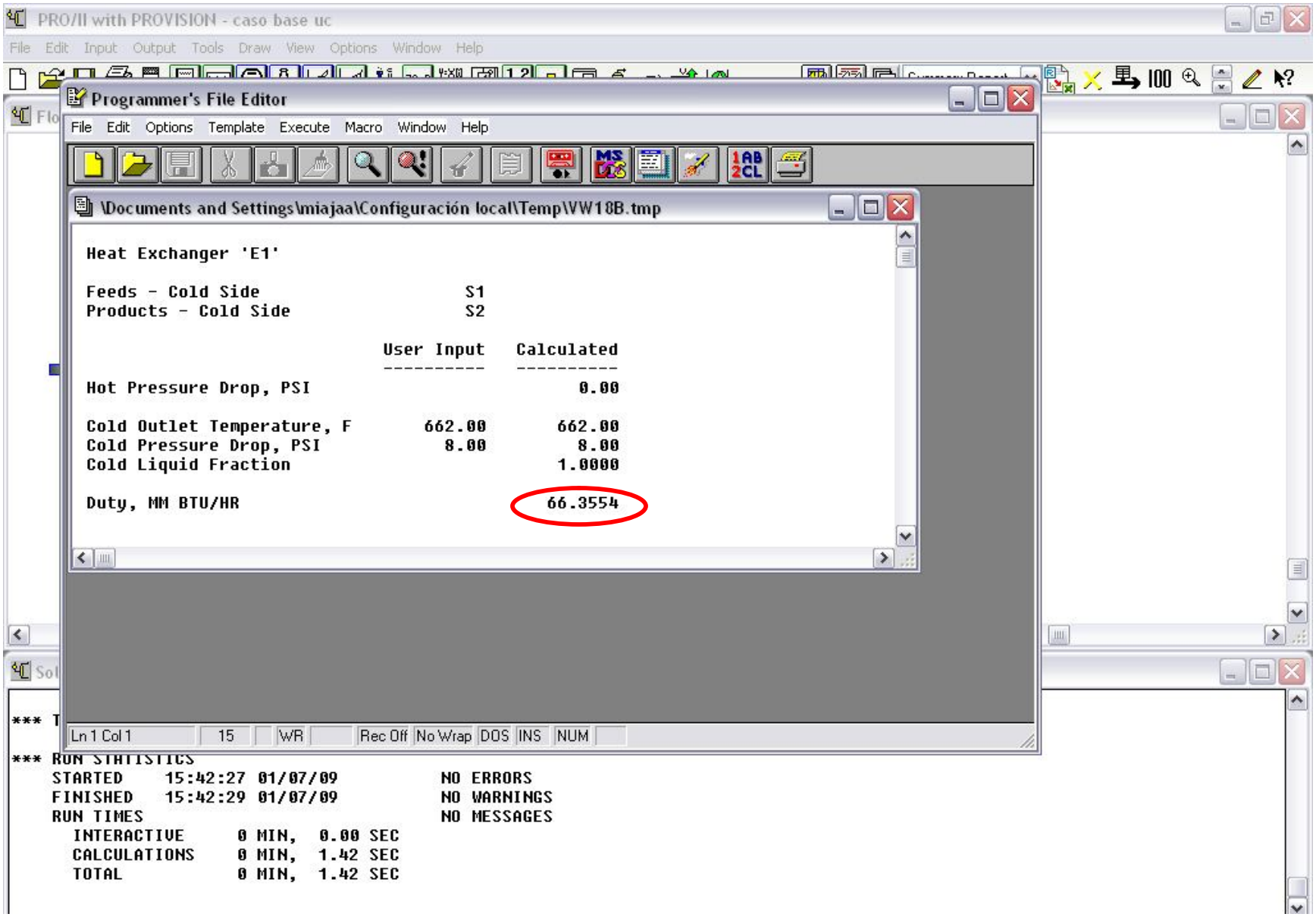

PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
PRO/II - Stream Data
UOM Range Help Tag Overview Status Notes
Stream: S8
Description:
To Unit: E2
Stream Type
Composition Defined
Petroleum Assay
Referenced to Stream
Solids Only Stream
Flowrate and Composition...
Stream Solids Data...
Stream Polymer Data...
Thermal Condition
First Specification:
Temperature
66.00 F
Second Specification:
Pressure
214.7 psia
Thermodynamic System:
Determined From Connectivity
OK
Cancel
Enter stream pressure
S8
S4
S7
S9
E2
S5
S6
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater
caso base uc Solved
*** THIS RUN USED 15.22 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:22:45 01/07/09 NO ERRORS
FINISHED 15:22:48 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 2.25 SEC
TOTAL 0 MIN, 2.25 SEC


PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
P1
S1
E1
S2
S3
F1
S4
S5
S6
S7
S8
S9
E2
caso base uc Solved
*** THIS RUN USED 20.95 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:42:27 01/07/09 NO ERRORS
FINISHED 15:42:29 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.42 SEC
TOTAL 0 MIN, 1.42 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater


PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Summary Report
Flowsheet
ALIMENTACION
P1
S1
E1
S2
S3
F1
S4
S5
S6
S7
S8
S9
E2
Data Review Window
View Results
View Excel Results
Data Entry...
Notes...
Copy
Collapse
Delete
Rotate
Flip
Restore Label Position
Center in View
Center Upstream Unit
Reroute
Display...
Rename...
Add to Active Report
Solving caso base uc
*** THIS RUN USED 20.95 PRO/II SIMULATION UNITS
*** RUN STATISTICS
STARTED 15:42:27 01/07/09 NO ERRORS
FINISHED 15:42:29 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.42 SEC
TOTAL 0 MIN, 1.42 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater


PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Programmer's File Editor
File Edit Options Template Execute Macro Window Help
\Documents and Settings\miajaa\Configuración local\Temp\VW185.tmp
STREAM 'S7'
TOTAL VAPOR LIQUID 1 LIQUID 2
RATE, LB-MOL/HR 2283.9766 456.7950 4.3091 1822.8726
TEMPERATURE, F 383.43 383.43 383.43 383.43
PRESSURE, PSIA 206.70 206.70 206.70 206.70
MOLECULAR WEIGHT 18.8548 20.6723 181.2409 18.0155
FRACTION 0.2000 1.8867E-03 0.7981
ENTHALPY, BTU/LB-MOL 9721.8152 22455.0416 32448.0343 6477.2643
CP, BTU/LB-F 0.9422 0.4997 0.5807 1.0780
MOLAR FLOWRATES, LB-MOL/HR
1 - H2O 2273.0212 449.1506 1.0014 1822.8693
2 - NBP 389 1.8548 1.7018 0.1517 1.3485E-03
3 - NBP 412 1.7611 1.5750 0.1852 9.2538E-04
4 - NBP 437 1.3387 1.1530 0.1852 4.8597E-04
5 - NBP 462 1.0289 0.8416 0.1870 2.5273E-04
6 - NBP 487 0.8393 0.6397 0.1994 1.3599E-04
7 - NBP 513 0.7589 0.5260 0.2329 7.8894E-05
8 - NBP 538 0.7067 0.4322 0.2744 4.5791E-05
9 - NBP 562 0.5889 0.3068 0.2820 2.3031E-05
10 - NBP 587 0.4173 0.1776 0.2397 9.4373E-06
Ln 1 Col 1 76 WR Rec Off No Wrap DOS INS NUM
*** RUN STATISTICS
STARTED 15:42:27 01/07/09 NO ERRORS
FINISHED 15:42:29 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.42 SEC
TOTAL 0 MIN, 1.42 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater


PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Programmer's File Editor - [\Documents and Settings\miajaa\Configuración local\Temp\VW187.tmp]
File Edit Options Template Execute Macro Window Help
STREAM 'S9'
TOTAL VAPOR
RATE, LB-MOL/HR 4000.0000 4000.0000
TEMPERATURE, F 388.18 388.18
PRESSURE, PSIA 214.70 214.70
MOLECULAR WEIGHT 18.0153 18.0153
FRACTION 1.0000
ENTHALPY, BTU/LB-MOL 22039.1250 22039.1250
CP, BTU/LB-F 0.4992 0.4992
MOLAR FLOWRATES, LB-MOL/HR
1 - H2O 4000.0000 4000.0000
2 - NBP 389 0.0000 0.0000
3 - NBP 412 0.0000 0.0000
4 - NBP 437 0.0000 0.0000
5 - NBP 462 0.0000 0.0000
6 - NBP 487 0.0000 0.0000
7 - NBP 513 0.0000 0.0000
8 - NBP 538 0.0000 0.0000
9 - NBP 562 0.0000 0.0000
10 - NBP 587 0.0000 0.0000
11 - NBP 612 0.0000 0.0000
12 - NBP 640 0.0000 0.0000
13 - NBP 660 0.0000 0.0000
Ln 1 Col 1 76 WR Rec Off No Wrap DOS INS NUM
*** RUN STATISTICS
STARTED 15:42:27 01/07/09 NO ERRORS
FINISHED 15:42:29 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.42 SEC
TOTAL 0 MIN, 1.42 SEC
PFD
Streams
Block Diagram
Flash
Flash w Solids
Distillation
Side Column
Shortcut
Mixer
Splitter
Simple HX
Rigorous HX
Fired Heater


PRO/II with PROVISION - caso base uc
File Edit Input Output Tools Draw View Options Window Help
Programmer's File Editor
File Edit Options Template Execute Macro Window Help
\Documents and Settings\miajaa\Configuración local\Temp\VW18B.tmp
Heat Exchanger 'E1'
Feeds - Cold Side S1
Products - Cold Side S2
User Input Calculated
Hot Pressure Drop, PSI 0.00
Cold Outlet Temperature, F 662.00 662.00
Cold Pressure Drop, PSI 8.00 8.00
Cold Liquid Fraction 1.0000
Duty, MM BTU/HR 66.3554
Ln 1 Col 1 15 WR Rec Off No Wrap DOS INS NUM
*** RUN STATISTICS
STARTED 15:42:27 01/07/09 NO ERRORS
FINISHED 15:42:29 01/07/09 NO WARNINGS
RUN TIMES NO MESSAGES
INTERACTIVE 0 MIN, 0.00 SEC
CALCULATIONS 0 MIN, 1.42 SEC
TOTAL 0 MIN, 1.42 SEC