

# Getting started with ProSimPlus®

## Use Case 6: Define a parameter as an adjusted variable

Software & Services In Process Simulation

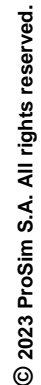
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ProSim

## 1. In the "Scripts" tab of the module

### 3. Click on "More" and "Generate a report..."



# Parameter report

```

PSPS_EX_EN-Cyclohexane-Plant-R101.txt - Bloc-notes
-----
PREDEFINED
-----
NC = 4
NET = 0
NCE = 1
NCS = 1
NCIE = 0
NCIS = 0
NBF = 10
NRC = 1
PAR Size (number of values) = 509
-----
CONSTANTS
-----
ECP = 5
  Value = 5
UMP = 10
  Value = 10
NRCM = 25
  Value = 25
NRCEA = NRCE+NRCA
  Value = 0
NRCCA = NRC-NRCE
  Value = 1
NRCC = NRC-NRCE-NRCA
  Value = 1
DUM = NRCM*max(UMP,NC)
  Value = 250
-----
VARIABLES
-----
NRCE = 15+3*NRCM+NRCE*NC
  Position = 190
  Value = 0
NRCA = 16+3*NRCM+NRCE*NC
  Position = 191
  
```

Number of parameters

The text file (.txt) contains all parameters of the selected unit operation:

- Predefined
- Constants
- Variables
- Parameters

# Parameter report

```

PSPS_EX_EN-Cyclohexane-Plant-R101.txt - Bloc-notes
Fichier Edition Format Affichage Aide
-----
PARAMETERS
-----
ReactionsCount = ①
  Value = 1

ThermalSpecType = ②
  Value = Reactor with a specified output temperature ③

OutputTemperature = ③
  Unit name = K
  Value = 497

HeatDuty = ④
  Unit name = KCAL/HR
  Value = -1.5629E007

OutputPressure = ⑤
  Unit name = ATM
  Value = 0

PressureDrop = ⑥
  Unit name = ATM_d
  Value = 1.02

OutputPhysicalState = ⑦
  Value = To be calculated ⑧ (-1)

SelectivityCompoundIndex = ⑧
  Value = -1

HeatDutySupplied = ⑨
  Unit name = KCAL/HR
  Value = 0

HeatDutyRemoved = ⑩
  Unit name = KCAL/HR
  Value = 0

ConversionRateKeyCompoundsIndexes[reaction:NRC] = 11
  
```

Access to all parameters of the selected unit operation

*i* number of parameter(*i*)

Value of the parameter(*i*) in ProSim unit



# Parameter report

Search for the number of the desired parameter:  
e. g. Conversion ratio of a reaction in a simple reactor

```

PSPS_EX_EN-Cyclohexane-Plant-R101.txt - Bloc-notes
Fichier Edition Format Affichage Aide

HeatDutySupplied = 9
Unit name = KCAL/HR
Value = 0

HeatDutyRemoved = 10
Unit name = KCAL/HR
Value = 0

ConversionRateKeyCompoundsIndexes[reaction:NRC] = 11
First element position = 11
Element offset function = reaction
Last element position = 11
Length = 1
Values :
(1) = 3

ConversionRatios[reaction:NRC] = 11+NRCM
First element position = 36
Element offset function = reaction
Last element position = 36
Length = 1
Values :
(1) = 0.999

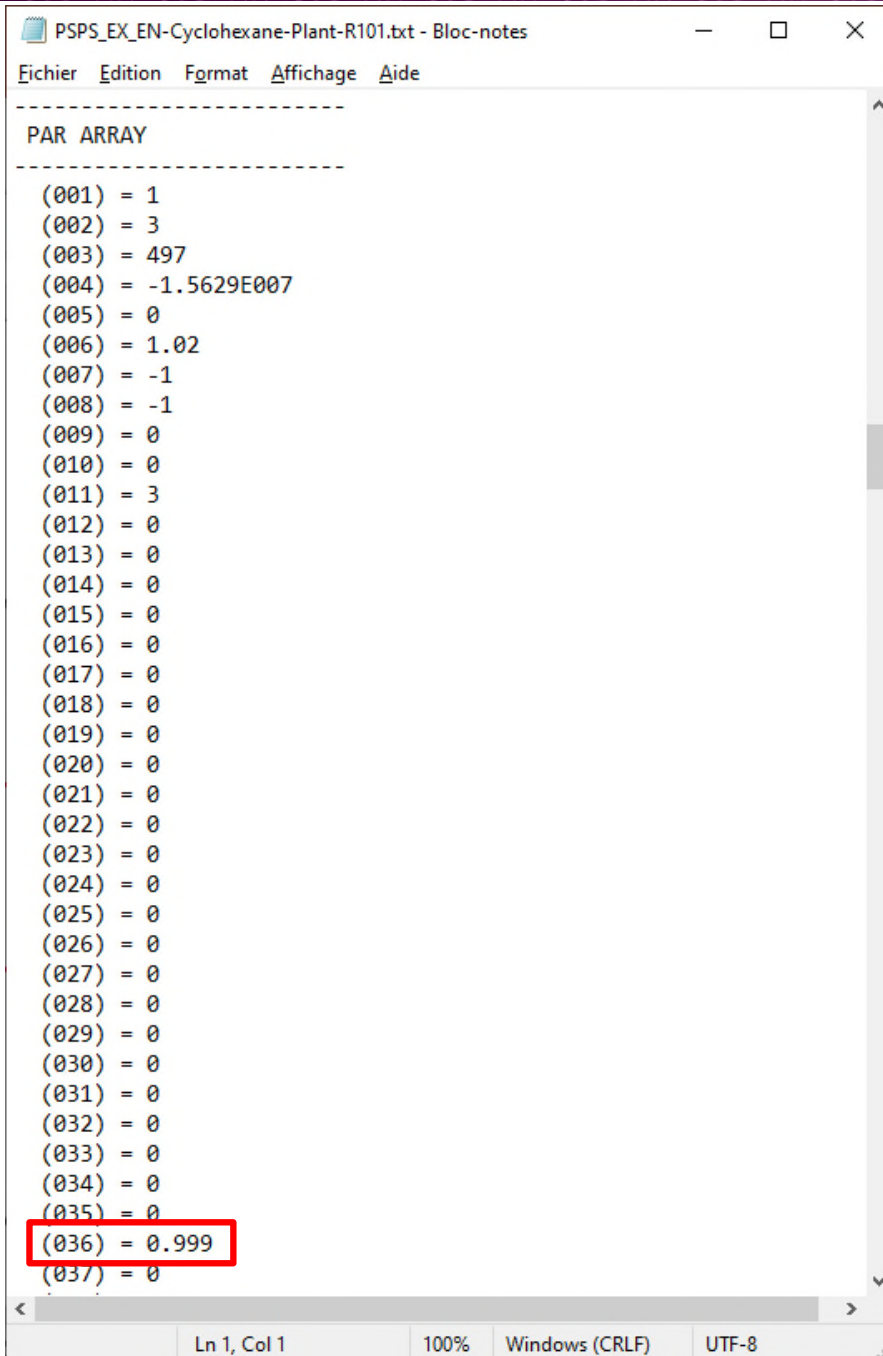
Selectivities[reaction:NRC] = 11+2*NRCM
First element position = 61
Element offset function = reaction
Last element position = 61
Length = 1
Values :
(1) = -1

StoichiometricCoefficients[compound:NC, reaction:NRC] = 11+3*NRC
First element position = 86
Element offset function = NC*reaction + compound
Last element position = 89
  
```

In this case, the position of the conversion ratio of the first reaction in the parameter() array is: 36

In the current simulation, value of the conversion ratio of the first reaction is 0.999 (or 99.9 %)

# Parameter report



```
PSPS_EX_EN-Cyclohexane-Plant-R101.txt - Bloc-notes
Fichier Edition Format Affichage Aide
-----
PAR ARRAY
-----
(001) = 1
(002) = 3
(003) = 497
(004) = -1.5629E007
(005) = 0
(006) = 1.02
(007) = -1
(008) = -1
(009) = 0
(010) = 0
(011) = 3
(012) = 0
(013) = 0
(014) = 0
(015) = 0
(016) = 0
(017) = 0
(018) = 0
(019) = 0
(020) = 0
(021) = 0
(022) = 0
(023) = 0
(024) = 0
(025) = 0
(026) = 0
(027) = 0
(028) = 0
(029) = 0
(030) = 0
(031) = 0
(032) = 0
(033) = 0
(034) = 0
(035) = 0
(036) = 0.999
(037) = 0
Ln 1, Col 1 100% Windows (CRLF) UTF-8
```

This information can also be verified at the end of the text file in the "PAR ARRAY" section

# Information stream

To define such parameter that is not in the default dropdown list of an information stream as an adjusted variable coming from a SPEC module:

Information stream (SISTR4)

Name: Inf

Desc:

Identification Parameters Notes

Information type to be emitted:

Automatic

Information vector to be emitted will be automatically determined depending on the parameters of "Spec1"

Start: 0 End: 0

Information type to be received:

Defined by its position in the unit block's parameter ...

Supply here the first and the last locations of the information stream to be received in "R101"

Start: 36 End: 36

OK Cancel

1. Select "Defined by its position in the unit block's parameter zone" for the information type to be received

2. Enter the position number found previously



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