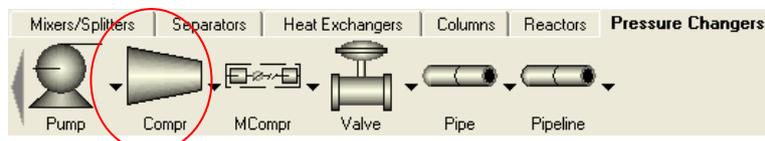
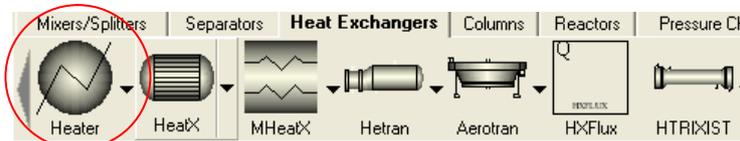
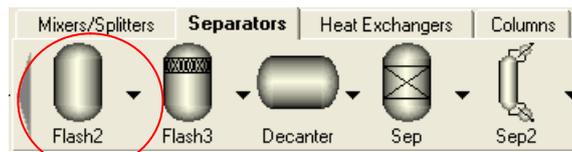
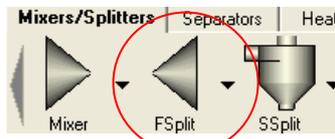
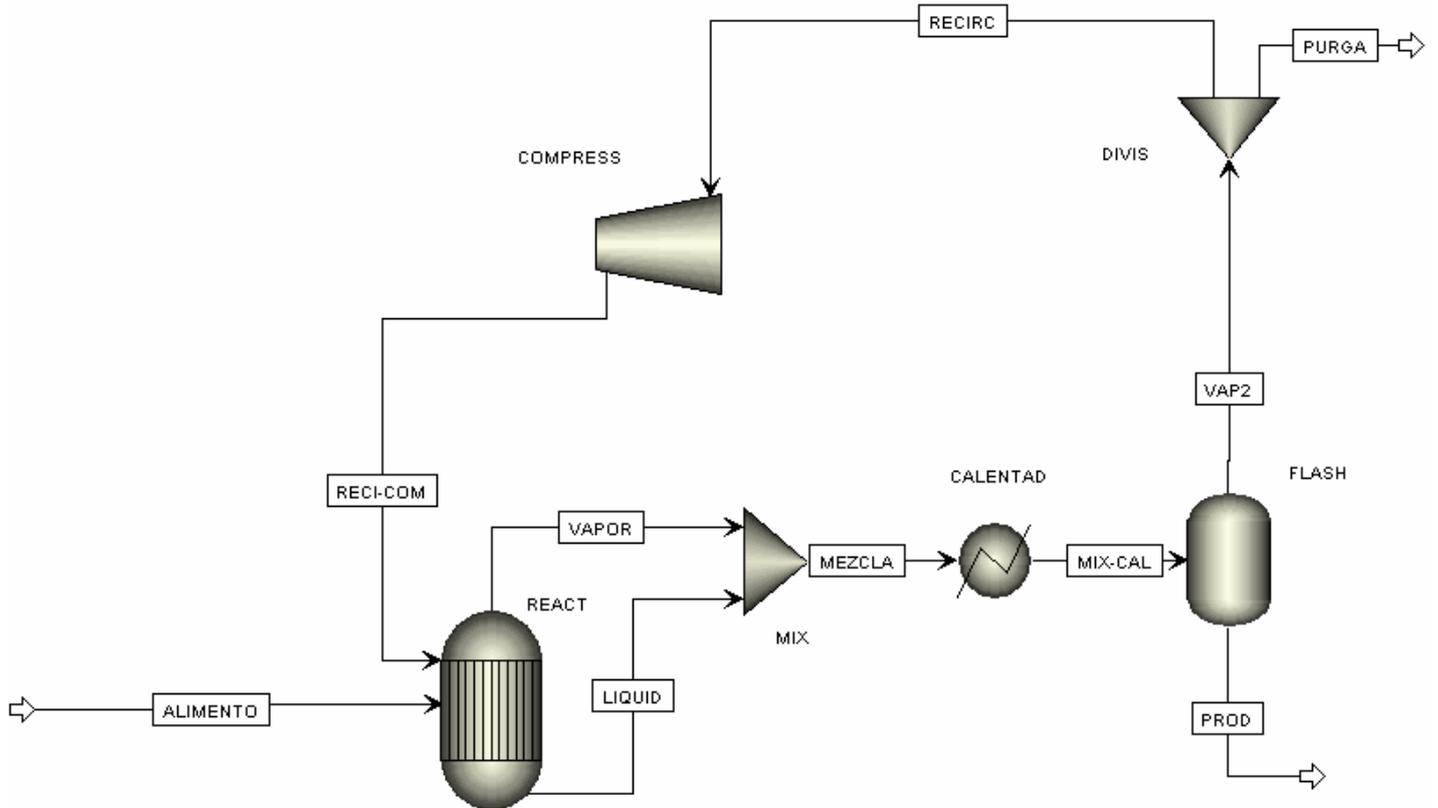


REACTOR DE AMONIACO CON RECICLO

Obtenga el siguiente diagrama de flujo:



Seleccione los componentes:

Define components

Component ID	Type	Component name	Formula
N2	Conventional	NITROGEN	N2
H2	Conventional	HYDROGEN	H2
NH3	Conventional	AMMONIA	H3N
AR	Conventional	ARGON	AR
CH4	Conventional	METHANE	CH4
*			

Seleccione el método base CHAO SEADER:

Property methods & models

Process type: ALL
 Base method: CHAO-SEA
 Henry components:

Petroleum calculation options

Free-water method: STEAM-TA
 Water solubility: 3

Electrolyte calculation options

Chemistry ID:

Property method: CHAO-SEA

Modify property models

Vapor EOS: ESRK
 Data set: 1
 Liquid gamma: GMXSH
 Data set: 1
 Liquid enthalpy: HLMX13
 Liquid volume: VLMX20

Poynting correction
 Heat of mixing

oprima y complete la información del ALIMENTO:

Substream name: MIXED

Ref Temperature

State variables

Temperature: 77 F
 Pressure: 200 atm
 Total flow: Mole
 Solvent:

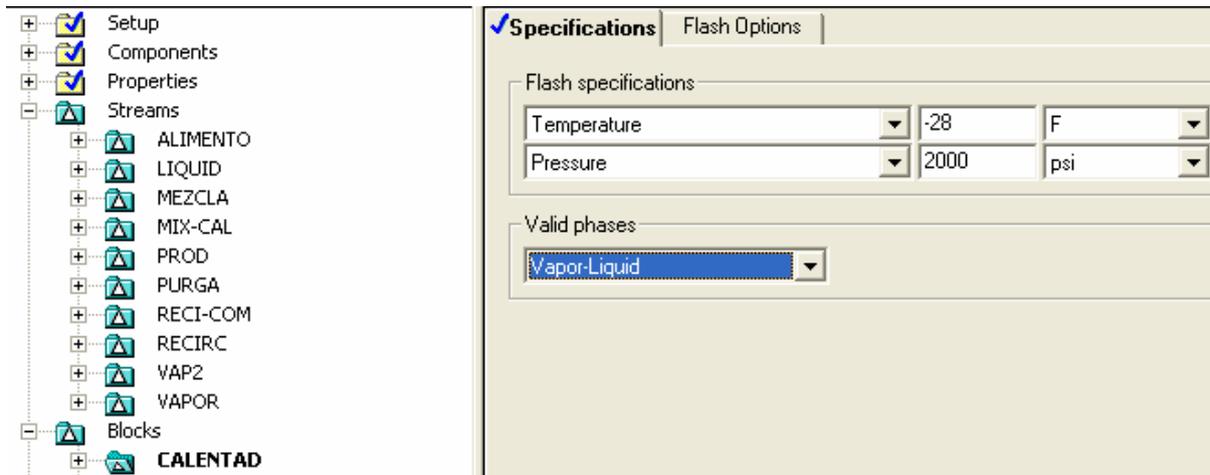
Composition

Mole-Flow lbmol/hr

Component	Value
N2	24
H2	74,3
NH3	0
AR	0,6
CH4	1,1

Total: 100

oprime  y complete la información del bloque CALENTAD:



Specifications | Flash Options

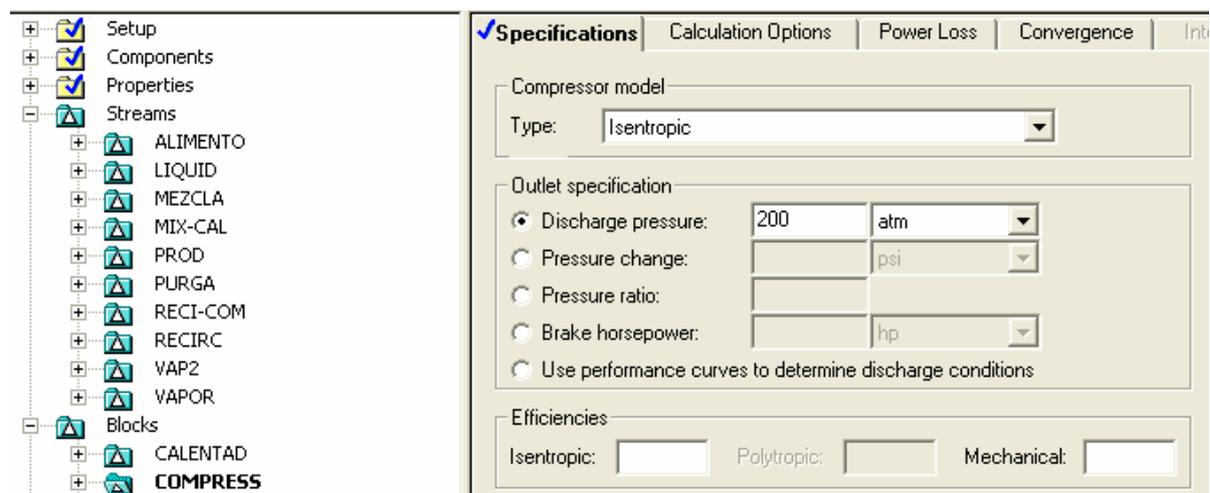
Flash specifications

Temperature: -28 F

Pressure: 2000 psi

Valid phases: Vapor-Liquid

oprime  y complete la información del bloque COMPRESS:



Specifications | Calculation Options | Power Loss | Convergence | Int

Compressor model

Type: Isentropic

Outlet specification

Discharge pressure: 200 atm

Pressure change: psi

Pressure ratio:

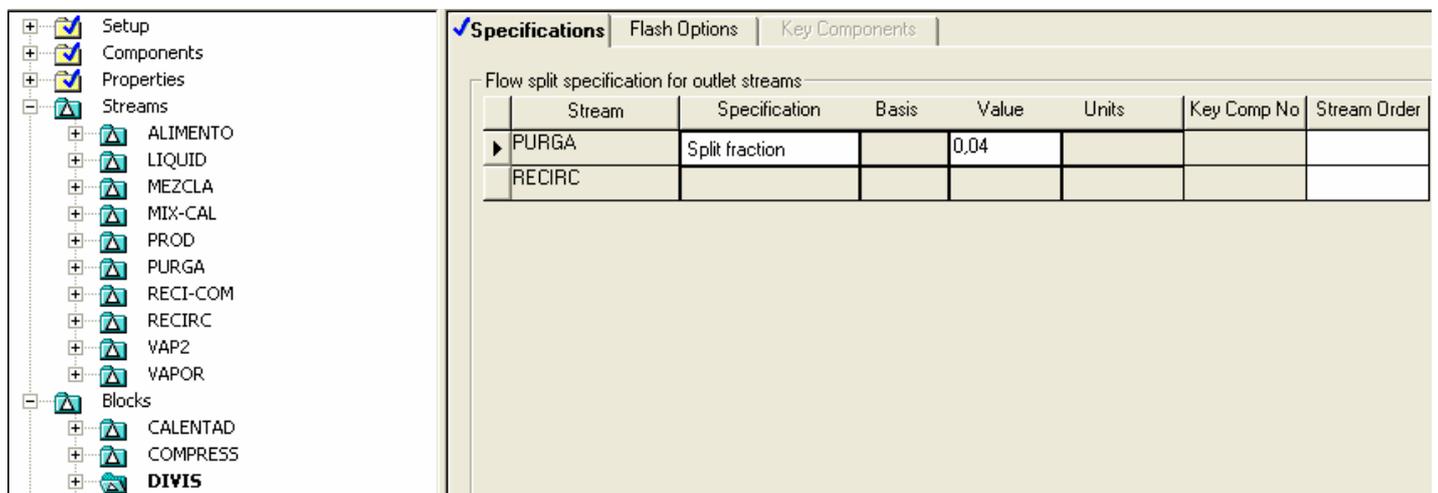
Brake horsepower: hp

Use performance curves to determine discharge conditions

Efficiencies

Isentropic: Polytropic: Mechanical:

oprime  y complete la información del bloque DIVIS:

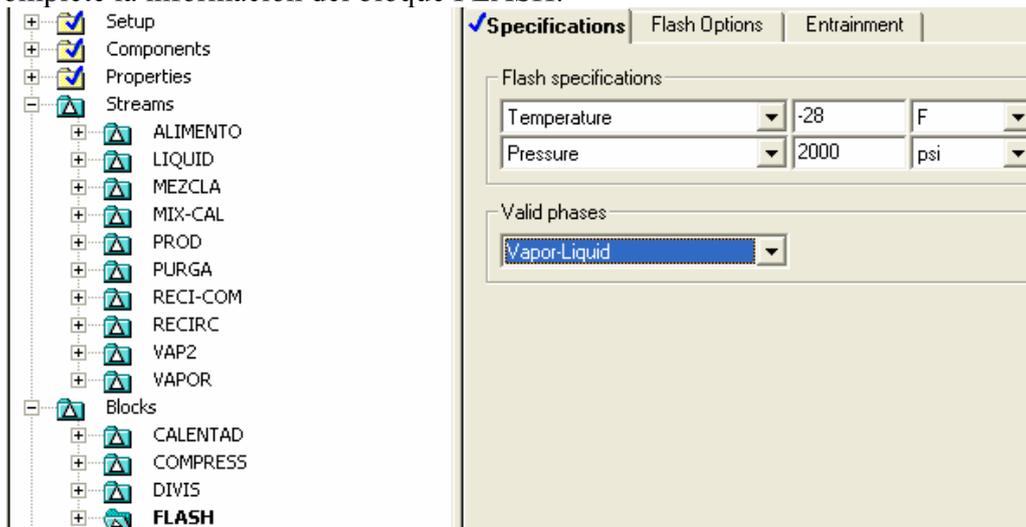


Specifications | Flash Options | Key Components

Flow split specification for outlet streams

Stream	Specification	Basis	Value	Units	Key Comp No	Stream Order
PURGA	Split fraction		0.04			
RECIRC						

oprime  y complete la información del bloque FLASH:



Setup

Components

Properties

Streams

- ALIMENTO
- LIQUID
- MEZCLA
- MIX-CAL
- PROD
- PURGA
- RECI-COM
- RECIRC
- VAP2
- VAPOR

Blocks

- CALENTAD
- COMPRESS
- DIVIS
- FLASH**

Specifications | Flash Options | Entrainment

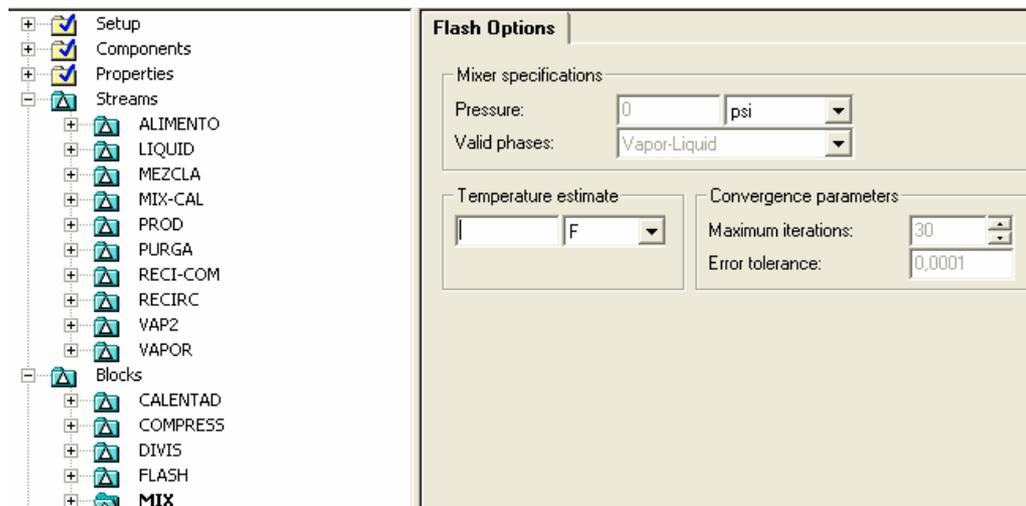
Flash specifications

Temperature: -28 F

Pressure: 2000 psi

Valid phases: Vapor-Liquid

oprime  y complete la información del bloque MIX:



Setup

Components

Properties

Streams

- ALIMENTO
- LIQUID
- MEZCLA
- MIX-CAL
- PROD
- PURGA
- RECI-COM
- RECIRC
- VAP2
- VAPOR

Blocks

- CALENTAD
- COMPRESS
- DIVIS
- FLASH
- MIX**

Flash Options | Convergence | Entrainment

Mixer specifications

Pressure: 0 psi

Valid phases: Vapor-Liquid

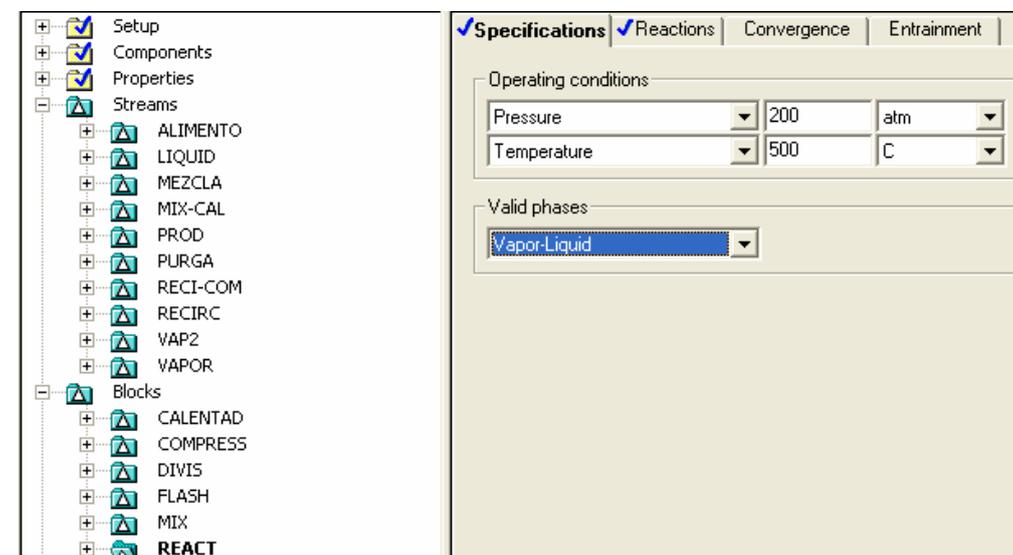
Temperature estimate: F

Convergence parameters

Maximum iterations: 30

Error tolerance: 0,0001

oprime  y complete la información del bloque REACT:



Setup

Components

Properties

Streams

- ALIMENTO
- LIQUID
- MEZCLA
- MIX-CAL
- PROD
- PURGA
- RECI-COM
- RECIRC
- VAP2
- VAPOR

Blocks

- CALENTAD
- COMPRESS
- DIVIS
- FLASH
- MIX
- REACT**

Specifications | **Reactions** | Convergence | Entrainment

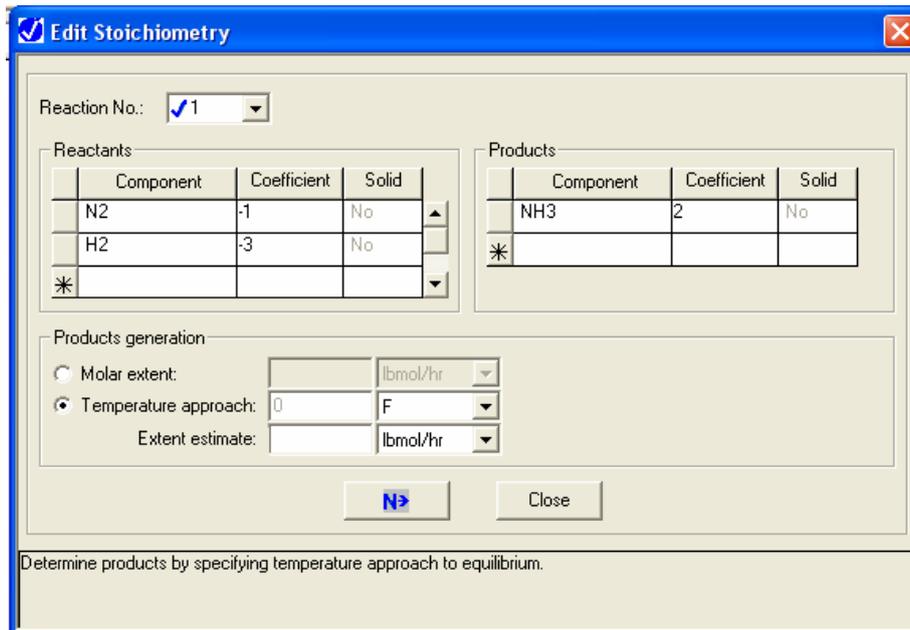
Operating conditions

Pressure: 200 atm

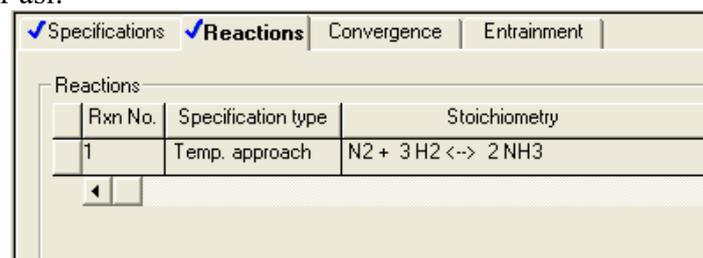
Temperature: 500 C

Valid phases: Vapor-Liquid

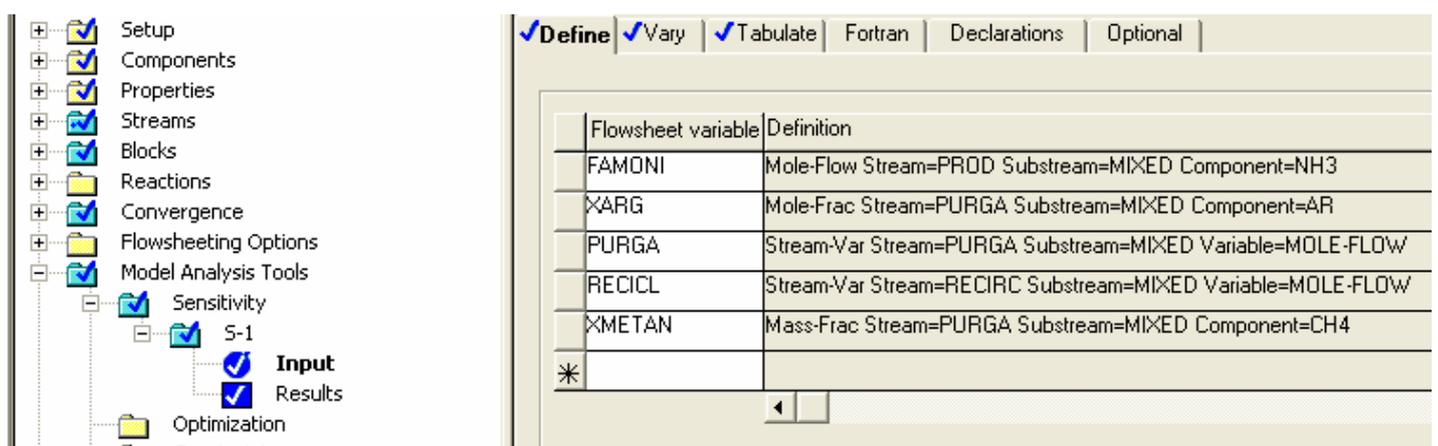
Cree un objeto REACTIONS y introduzca la reaccion:



El formulario debe aparecer así:



Cree un objeto sensitivity y cambie la relacion de flujos en el divisor:



Define Vary Tabulate Fortran Declarations Optional

Variable number: 1

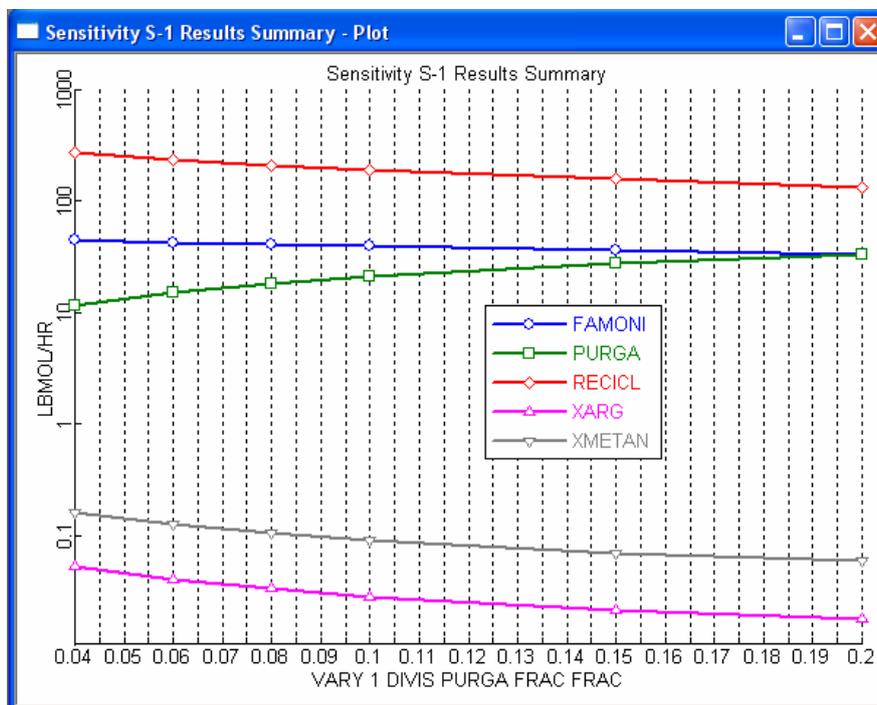
Manipulated variable
 Type: Block-Var
 Block: DIMS
 Variable: FLOW/FRA
 Sentence: FLOW/FRA
 ID1: PURGA

Values for varied variable
 List of values

0,2	0,15	0,1	0,08	0,06	0,04
-----	------	-----	------	------	------

 Overall range
 Lower:
 Upper:
 #Point: Incr:

Report labels
 Line 1: Line 2:
 Line 3: Line 4:



Las composiciones de Argon y Metano aumentan al disminuir la purga y ellas son muy grandes respecto a las del alimento, esto es, si la relación purga/reciclo disminuye, el efluente vapor del flash llega a ser mas rico en los componentes inertes, sin embargo esto incrementa el flujo del reciclado y el costo de recirculación (además del volumen del reactor).