ExerCom

LICENSES

ExerCom is sold with a once-off purchase fee. This means no yearly subscriptions or additional costs. The programme can be installed on multiple machines, but a hardware key is required to run the programme.

License fees differ for academic or industrial use. Multiple licenses are offered at a discount.

HOW TO ORDER?

ExerCom can only be ordered through CCS. If you are interested in ExerCom or wish to receive more information on ExerCom, then please contact us, by email at exergy@cocos.nl or by phone +31 (0)570-667000.

www.exergy.nl

Phone: +31 (0)570-667000
Mail: exergy@cocos.nl

JACOBS Consultancy

ExerCom

Calculating exergy in Aspen and PRO/II

Do you want to calculate exergy, then ExerCom may be your solution

JACOBS Consultancy

ExerCom

EXERGY

Energy can never be lost as stated by the first law of thermodynamics. However, something is lost during an irreversible process, as stated by the second law of thermodynamics. This is the quality of energy, its ability to be converted into other kinds of energy, and especially to perform work in the conditions of technical processes. As such, exergy is a measure of sustainability.

The main purpose of exergy analysis is to detect and evaluate quantitatively the causes of the thermodynamic imperfection of thermal and chemical processes. Exergy analysis can, therefore, give information about possibilities of improving thermal and chemical processes, but cannot state whether or not the possible improvement is practical and economically viable. Such a question can be answered only by an economic analysis.

ExerCom

WHAT IS EXERCOM?

ExerCom is a plug-in for Aspen and PRO/II, which is developed and owned by Jacobs Consultancy.

It calculates the exergy of gases and liquids in the flowsheet.

It calculates the chemical exergy, according to Szargut's reference state, the exergy of mixing and the physical exergy. Additionally it calculates a list of enthalpies relative to the reference conditions of Szargut. The database for the standard chemical enthalpy and exergy can be changed and extended by the user.

The results of this calculation are added to the bottom of the stream output, and can be exported for further processing.

ExerCom does not calculate the exergy of electrolytes.

ExerCom

Heat and Material Balance Table

Stream ID		1	2	3	4	5
From				B1	B1	B1
To		B1	B1			
Phase		VAPOR	LIQUID	VAPOR	LIQUID	MISSING
Substream: MIXED						
Mole Flow	kmol/sec					
WATER		.0121272	0.0	2.34271E-4	.0118929	0.0
CARBO-01		1.34747E-3	0.0	1.34747E-3	0.0	0.0
N-HEX-01		0.0	3.22333E-4	3.22333E-4	0.0	0.0
Total Flow	kmol/sec	.0134747	3.22333E-4	1.90408E-3	.0118929	0.0
Total Flow	kg/sec	.2777778	.0277777	.0913002	.2142553	0.0
Total Flow	cum/sec	.1172204	4.69442E-5	.0511582	2.16841E-4	0.0
Temperature	K	523.1500	373.1500	323.1500	323.1500	
Pressure	N/sqm	5.00000E+5	3.00000E+5	1.00000E+5	1.00000E+5	1.00000E+5
Vapor Frac		1.000000	0.0	1.000000	0.0	
Liquid Frac		0.0	1.000000	0.0	1.000000	
Solid Frac		0.0	0.0	0.0	0.0	
Enthalpy	J/kmol	-2.49038E+8	-1.81170E+8	-3.3510E+8	-2.8394E+8	
Enthalpy	J/kg	-1.2082E+7	-2.1084E+6	-6.9885E+6	-1.5761E+7	
Enthalpy	Watt	-3.3562E+6	-.58567.82	-6.3805E+5	-3.3769E+6	
Entropy	J/kmol-K	-30506.93	-6.0302E+5	-86886.15	-1.5709E+5	
Entropy	J/kg-K	-1479.861	-6997.453	-1812.020	-8719.746	
Density	kmol/cum	1.149520	6.866316	.0372193	54.84657	
Density	kg/cum	2.369705	591.7196	1.784662	988.0763	
Average MW		20.61473	86.17716	47.94987	18.01528	
Liq Vol 60F	cum/sec	2.91065E-4	4.19478E-5	1.18344E-4	2.14668E-4	0.0
*** ALL PHASES ***						
CHEMEX	Watt	39084.09	1.32624E+6	1.35499E+6	10703.68	
FYSEX	Watt	1.83501E+5	692.0511	1583.819	887.4452	
MIXEX	Watt	-10858.66	0.0	-3790.983	0.0	
TOTEX	Watt	2.11726E+5	1.32693E+6	1.35278E+6	11591.13	

FOR WHOM?

ExerCom is designed for companies, research institutions and universities that use Aspen Plus or Pro/II for their process design or process optimization and like to design process plants, which use our natural resources more efficiently by performing an exergy analysis.