

Getting started with Simulis® Thermodynamics

Use Case 3: Using CAPE-OPEN Property Packages in Simulis Thermodynamics

Software & Services In Process Simulation

We guide You to efficiency

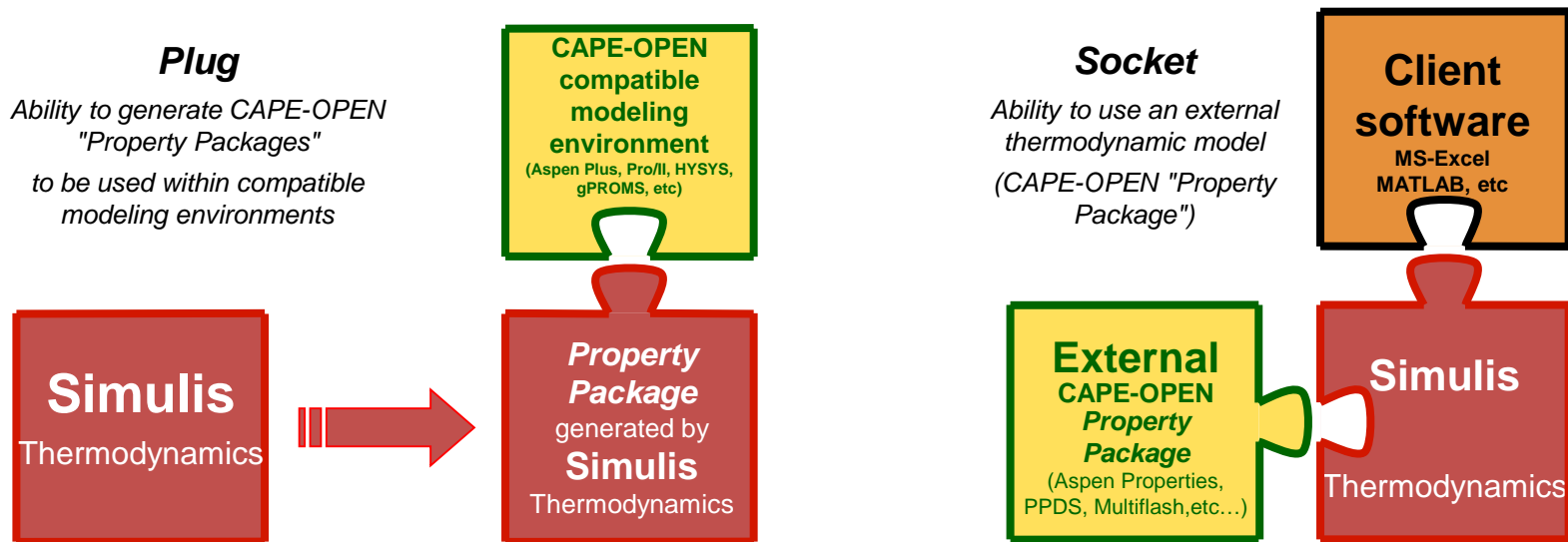


ProSim

Introduction

CAPE-OPEN Property Packages gather thermodynamic information on a model. You can use them in any CAPE-OPEN standard compliant application.

All data packages created with Simulis Thermodynamics are automatically CAPE-OPEN compliant (thermodynamic plug interface) and can be used in third parties applications. You can also import Property Packages that were created in other applications (thermodynamic socket interface).

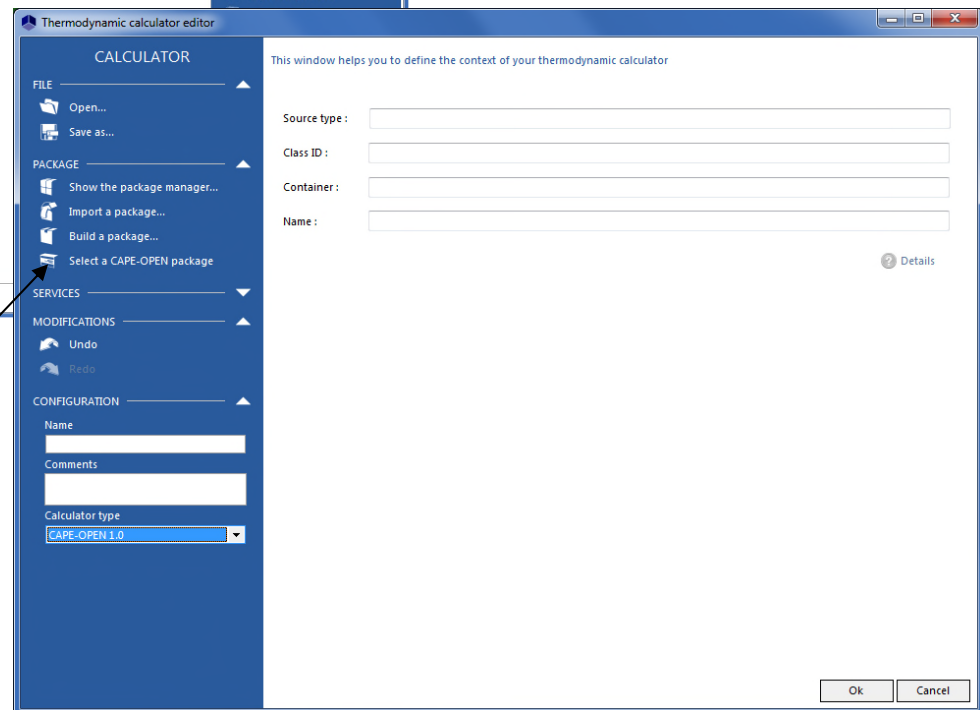
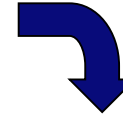
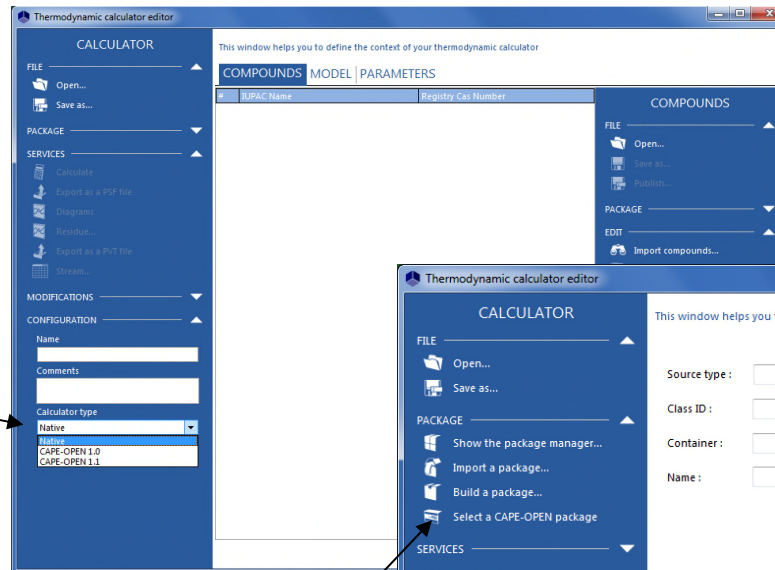


This document presents the different steps to follow in order to import a CAPE-OPEN Property Package within Simulis Thermodynamics. The process to create data packages in Simulis Thermodynamics is described in the "Getting started with Simulis Thermodynamics: Use Case 2".

Selecting a CAPE-OPEN Package

1. Select the type of calculator in the dropdown list (in that example, select **CAPE-OPEN 1.0**).

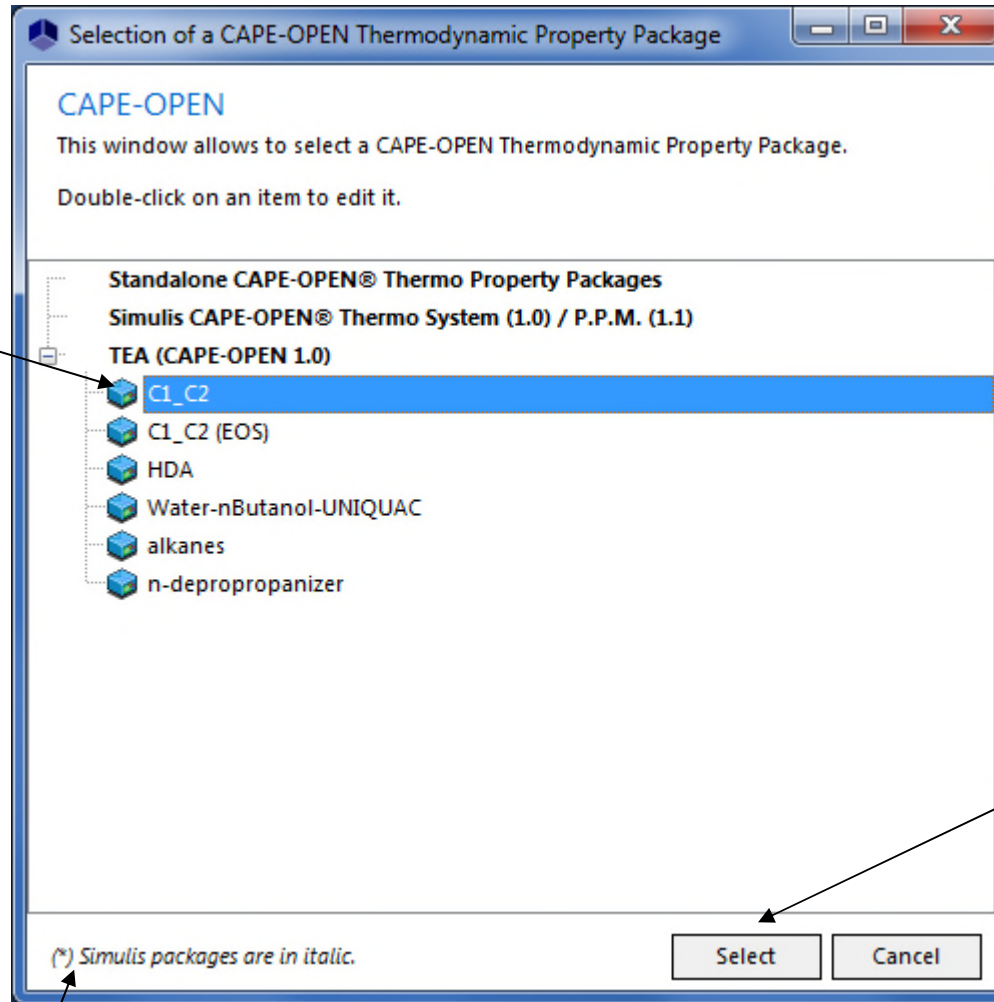
2. Click on "Select a CAPE-OPEN package"



It is possible to use different types of Calculators (also called *Calculation Engine*) through Simulis Thermodynamics interface. It is particularly useful if you have calculation methods that are different from the “*native*” ones provided by Simulis Thermodynamics.

Selecting a CAPE-OPEN Package

1. Select the CAPE-OPEN package you want to use



2. Confirm your selection

Thermodynamic packages generated with Simulis Thermodynamics are automatically CAPE-OPEN compliant. They are listed in italic.

Selecting a CAPE-OPEN Package

Thermodynamic calculator editor

CALCULATOR

FILE

- Open...
- Save as...

PACKAGE

- Show the package manager...
- Import a package...
- Build a package...
- Select a CAPE-OPEN package

SERVICES

- Calculate
- Export as a PSF file
- Diagrams
- Residue...
- Export as a PVT file
- Stream...

MODIFICATIONS

CONFIGURATION

Name

Comments

Calculator type

CAPE-OPEN 1.0

This window helps you to define the context of your thermodynamic calculator

Source type : CO Thermo System

Class ID : {90DAC7FA-E0E4-40B5-A903-E0B12774D52B}

Container : TEA (CAPE-OPEN 1.0)

Name : C1_C2

Details

Ok Cancel

Click on "**Details**" to view the package information

You can run calculations directly from this window by clicking on "**Calculate**"

Click here to validate.
The calculations that call this calculator will rely on the data provided by this package.

Detailed view of a CAPE-OPEN package

Edition of a CAPE-OPEN Thermodynamic Property Package

CAPE-OPEN
This window displays some information about a CAPE-OPEN Thermodynamic Property Package

URL Vendor : <http://www.cocosimulator.org/>
URL Help : [<none>](#)

Name:

Description:

ClassID:

ProgID:

InProcServer32:

Short description:

Full description:

Version: CAPE-OPEN version:

About:

Compounds list	Properties list	Phases list
Methane / 74-82-8 / CH ₄ Ethane / 74-84-0 / C ₂ H ₆	activityCoefficient activityCoefficient.Dmoles activityCoefficient.DmolFraction activityCoefficient.Dpressure activityCoefficient.Dtemperature bubblePointTemperature density density.Dmoles	overall Vapor Liquid

Close

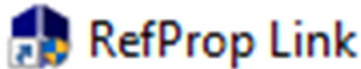
Source of the package

Description and technical information about the package

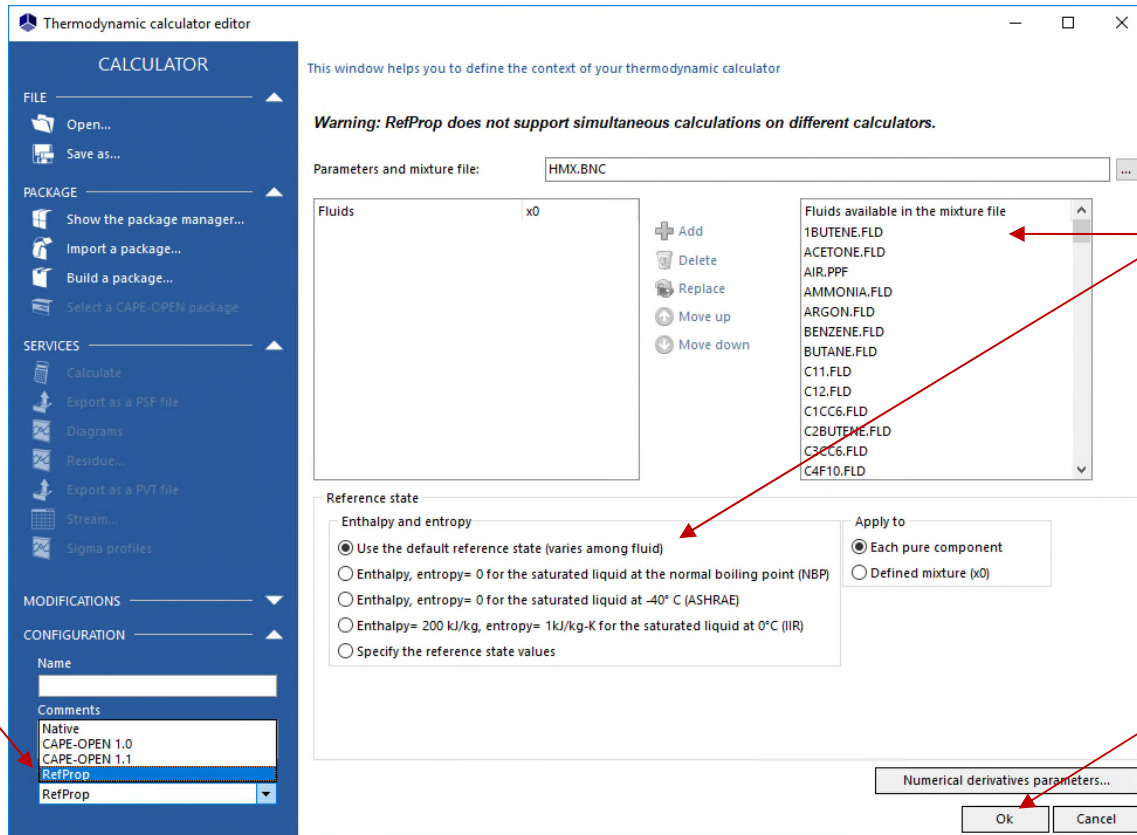
Details of the package content (compounds, list of properties that can be computed, phases)

Specific case of RefProp®

If you have RefProp®, you can use it through Simulis Thermodynamics. At any time, you can switch back to a « Native » Calculator.



1. You can link RefProp to Simulis Thermodynamics during its installation. Otherwise run the program called « RefProp Link » (automatically installed on your computer at the same time as any ProSim software)



2. Select
« RefProp »

3. Import the fluids
and specify the
reference state for
the calculation of
the enthalpy and
entropy

4. Click on « OK »
to confirm your
selection

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