Calculation of Bubble Points and Dew Points

Spoken Tutorial Project
http://spoken-tutorial.org

National Mission on Education through ICT
http://sakshat.ac.in

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In this tutorial, we will learn to generate:

Learning Objectives

In this tutorial, we will learn to generate:

- **Bubble Point Temperature** at a given pressure

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In this tutorial, we will learn to generate:

- **Bubble Point Temperature** at a given pressure
- **Dew Point Temperature** at a given pressure

- **DWSIM v 5.2 (Classic UI)**

System Requirement

- DWSIM v **5.2 (Classic UI)**
- Windows **10**

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- DWSIM v 5.2 (Classic UI)
- Windows 10
- Any OS: Linux, Mac OS X or FOSSEE OS on ARM

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- **Add components to a flowsheet**

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- **Select thermodynamic packages**

Prerequisites

To practice this tutorial, you should know to

- **Add components to a flowsheet**
- **Select thermodynamic packages**
- **Add material streams and specify their properties**

- **http://spoken-tutorial.org**
- **You can access these tutorials and all the associated files from this site**

Compounds and Inlet stream conditions

Mole Fraction	$x_{Methane} = 0.05$ $x_{Propane} = 0.15$ $x_{N-butane} = 0.2$ $x_{N-pentane} = 0.15$	$x_{Ethane} = 0.1$ $x_{Isobutane} = 0.1$ $x_{Isopentane} = 0.25$

Inlet stream conditions and Property Package

Temperature	$25\,°C$
Pressure	5 bar
Package	Soave-Redlich-Kwong

Summary

In this tutorial, we have learnt to generate:

- **Bubble Point Temperature** at a given pressure
- **Dew Point Temperature** at a given pressure

Assignment

Mole Fraction	$x_{Propane} = 0.05$ $x_{N-butane} = 0.25$ $x_{N-pentane} = 0.4$ $x_{N-hexane} = 0.3$
Temperature	$25\,^{\circ}\mathrm{C}$
Pressure	5 bar
Package	Soave-Redlich-Kwong

About the Spoken Tutorial Project

- Watch the video available at
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- If you do not have good bandwidth, you can download and watch it

Spoken Tutorial Workshops

The Spoken Tutorial Project Team,

- **Conducts workshops using spoken tutorials**

- **Gives certificates to those who pass an online test**

- **For more details, please write to contact@spoken-tutorial.org**

Forum for specific questions

- Do you have questions in this Spoken Tutorial?
- Please visit http://forums.spoken-tutorial.org
- Choose the minute and second where you have the question
- Explain your question briefly
- Someone from the FOSSEE team will answer them

DWSIM Flowsheeting Project

- **The FOSSEE team coordinates conversion of existing flow sheets**

- **We give honorarium and certificates for those who do this**

- **For more details, please visit this site http://dwsim.fossee.in/flowsheeting-project**

Textbook Companion Project

- **The FOSSEE team coordinates coding of solved examples of popular books**

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- **For more details, please visit this site http://dwsim.fossee.in/textbook-companion-project**

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- **We give honorarium and certificates for those who do this**

- **For more details, please visit this site http://dwsim.fossee.in/lab-migration-project**

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- **Thanks for joining**