

# Creating a Material Stream in DWSIM

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

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

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# Learning Objectives

We will learn how to

- **Select chemical components**



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- **Choose a thermodynamic package**



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- Select chemical components
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- **Choose units and values**



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We will learn how to

- Select chemical components
- Choose a thermodynamic package
- Choose units and values
- **Specify a material stream**



# System Requirements

- **DWSIM 3.4**



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- **DWSIM 3.4**
- **Any OS: Windows, Linux, Mac OS X or FOSSEE OS on ARM**



# Prerequisites

- Access to DWSIM



# Thermodynamic Package Selection

Components	Thermodynamics
Ideal gas/solution	Raoult's law
All gases or non polar	Peng-Robinson, SRK
Electrolytes	NRTL, Pitzer
Polar gases	NRTL, UNIQUAC
Polar compounds	UNIFAC
Polymers	SAFT



# Summary

We defined a material stream

- **Chose chemical components**



# Summary

We defined a material stream

- Chose chemical components
- Chose the property estimation package



# Summary

We defined a material stream

- Chose chemical components
- Chose the property estimation package
- **Completed specifications**



# Summary

We defined a material stream

- Chose chemical components
- Chose the property estimation package
- Completed specifications
  - **Assigned values and units**



# Summary

We defined a material stream

- Chose chemical components
- Chose the property estimation package
- Completed specifications
  - Assigned values and units
  - **Temperature, pressure, flow rate**



# Summary

We defined a material stream

- Chose chemical components
- Chose the property estimation package
- Completed specifications
  - Assigned values and units
  - Temperature, pressure, flow rate
- Pointed out many different options



# Assignment 1: Total is not 1

- Choose Benzene and Toluene mole fractions that do not add up to 1
- Check how DWSIM normalises when you press apply



# Assignment 2: Normalise button

- **Go to the page where you defined mole fractions**
- **Check what the normalise button does when the total is not 1**



# Assignment 3: Consistency check

- Go to the page where we defined the molar flow rate
- DWSIM automatically displayed the equivalent mass flow rate
- Check if these values are consistent



# Assignment 4

- **Create a stream consisting of Benzene, Toluene and Xylene**
- **Carry out the previous assignments for this stream also**



# About the Spoken Tutorial Project

- Watch the video available at [http://spoken-tutorial.org/What\\_is\\_a\\_Spoken\\_Tutorial](http://spoken-tutorial.org/What_is_a_Spoken_Tutorial)
- It summarises the Spoken Tutorial project



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- It summarises the Spoken Tutorial project
- 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](mailto:contact@spoken-tutorial.org)



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- More information on this mission is available at



# Thanks!

<http://dwsim.inforside.com.br/>

