

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**



Learning Objectives

We will learn how to

- Select chemical components
- Choose a thermodynamic package



Learning Objectives

We will learn how to

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



Learning Objectives

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**



System Requirements

- **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

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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



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- More information on this mission is available at



Thanks!

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

