

## PRODUCTION OF DIETHYL ETHER FROM ETHANOL BY DEHYDRATION

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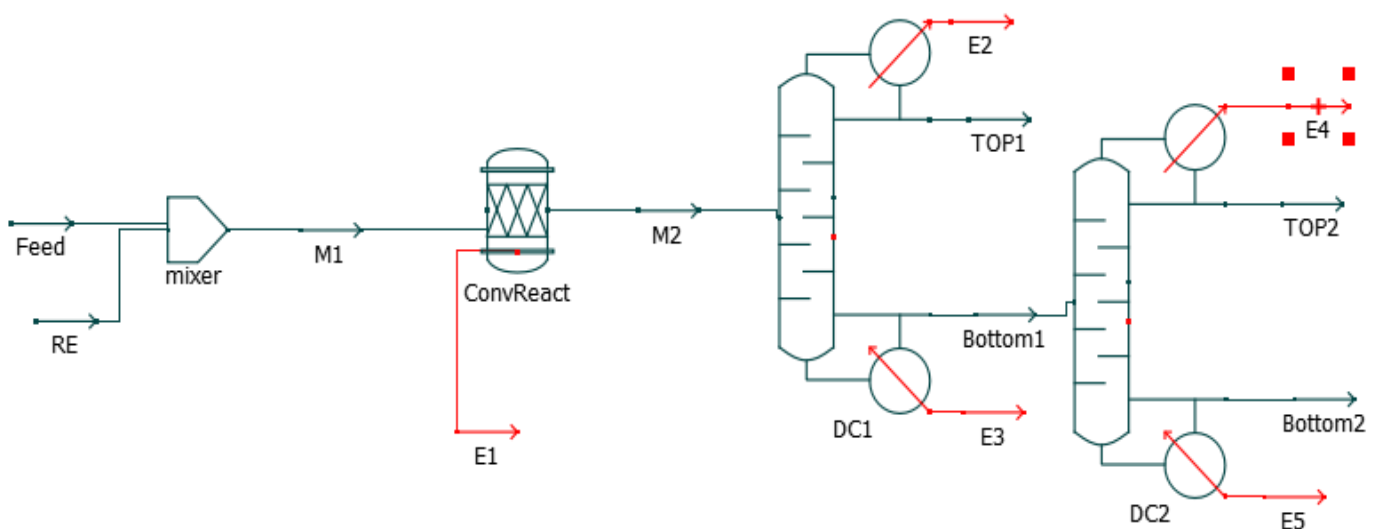
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### Background & Description:

Diethyl ether (C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>O is an organic compound which is also known as ethyl ether, ether or ethoxyethane. It is a colourless, highly volatile flammable liquid with a characteristic odour. It is commonly used as a solvent and as a general anesthetic. It has narcotic properties so it has been known to cause temporary psychological addiction, sometimes referred to as etheromania.

Diethyl ether may have been created by either JabiribnHayyan in the 8th century or RaymundusLullus in 1275, as there is no any evidence of this. It was first synthesized in 1540 by ValeriusCordus, who called it “sweet oil of vitriol” (oleum dulcevitrili) - the name reflects the fact that it is obtained by distilling a mixture of ethanol and sulfuric acid (then known as oil of vitriol). At about the same time, Paracelsus discovered the ether’s analgesic properties in chickens. The ether name comes in 1730 by August Sigmund Frobenius.

### Flowsheet:



**Results:**

DWSIM-Molar Flow Rate(mol/s)

	Feed	Diethyl ether(Top1)
Ethanol	17	0.06569
Water	3	0.019866506
Diethyl ether	0	8.4702859

OpenModalica-Molar Flow Rate(mol/s)

	Feed	Diethyl ether(Top1)
Ethanol	17	2.43944
Water	3	0.0192253
Diethyl ether	0	8.08633