## Assignment 9

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2019-04-03, 23:59 IST.

Use the following data to solve Questions 1-6.

<table>
<thead>
<tr>
<th></th>
<th>Ethane</th>
<th>Ethylene</th>
</tr>
</thead>
<tbody>
<tr>
<td>( T_e, K )</td>
<td>305.3</td>
<td>282.3</td>
</tr>
<tr>
<td>( P_e, \text{bar} )</td>
<td>48.72</td>
<td>50.4</td>
</tr>
<tr>
<td>( v_e, \text{cm}^3\text{mol}^{-1} )</td>
<td>145.5</td>
<td>131</td>
</tr>
<tr>
<td>( Z_e )</td>
<td>0.279</td>
<td>0.281</td>
</tr>
<tr>
<td>( \omega )</td>
<td>0.1</td>
<td>0.087</td>
</tr>
</tbody>
</table>

1) Consider pure ethane at 29.232 bar and 396.89 K. Assuming ideal gas behavior, the fugacity in bar (correct to three digits after the decimal) is

No, the answer is incorrect. Score: 0

Accepted Answers:

(Type: Range) 29.22, 29.24

2 points

2) Consider pure ethane at 29.232 bar and 396.89 K. Using Lee/Kesler tables, its fugacity in bar (correct to one digit after the decimal) is

No, the answer is incorrect. Score: 0

Accepted Answers:

(Type: Range) 20.5, 27.1

5 points
4) Consider a mixture containing 40 % ethane and 60 % ethylene at 73.08 bar and 39 K. Assuming ideal gas behaviour for both the species, the fugacity of ethane in mixture in bar (correct to three digits after the decimal) is

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 26.1, 27.1

5) Consider a mixture containing 40 % ethane and 60 % ethylene at 73.08 bar and 39 K. Using generalized correlations for the second virial coefficients, the fugacity of ethane in this mixture (correct to one digit after the decimal) is

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 29.22, 29.24

6) Consider a mixture containing 40 % ethane and 60 % ethylene at 73.08 bar and 39 K. Using Soave-RK equation of state, the fugacity of ethane in this mixture (correct to one digit after the decimal) is

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 23.0, 24.2