

For the reaction $3\text{H}_2(\text{g}) + \text{N}_2(\text{g}) \rightarrow 2\text{NH}_3(\text{g})$,

$\Delta G^\circ = -11.4 \text{ kJ/mol}$ at **623K**.

0.00900 mol NH_3

0.200 mol N_2

0.300 mol H_2 are mixed in a 1.00 L reactor at **623K**.

What is DG under these conditions?

Hint: must evaluate Q

☐ 45.0 kJ/mol

☐ 74.2 kJ/mol

☐ 96.5 kJ/mol



☒ -33.1 kJ/mol

☐ $-3.81 \times 10^{-6} \text{ kJ/mol}$

☐ -54.6 kJ/mol

☐ -5.60 kJ/mol

☐ -18.3 kJ/mol

All other things being equal, molecules in the which one of the following states have the lowest entropy?

☐ gas dissolved liquid

☐ solid dissolved in liquid

☐ gas



☒ solid