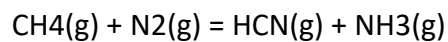


Answer on Question #77039- Chemistry - Physical Chemistry

Question:

The reaction



at 25 °C and 1 atm pressure has

$\Delta H_0 = 164 \text{ kJ}$ and

$\Delta G_0 = 159 \text{ kJ}$. Calculate

ΔS_0 at 25 °C.

A) 400 J/K

B) 100 J/K

C) 2 J/K

D) 17 J/K

E) 70 J/K

Solution:

$$\Delta G_0 = \Delta H_0 - T \Delta S_0;$$

$$\Delta S_0 = (\Delta H_0 - \Delta G_0)/T = ((164-159)*1000)/298 = 17 \text{ J/K};$$

So, correct answer - 17 J/K.

Answer: D) 17 J/K.