Marks
2
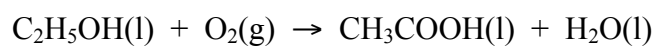
- Good wine will turn to vinegar if it is left exposed to air because the alcohol is oxidised to acetic acid. The equation for the reaction is

$$C_2H_5OH(l) + O_2(g) \rightarrow CH_3COOH(l) + H_2O(l)$$

Calculate $\Delta S°$ for this reaction in J K^{-1} mol^{-1}.

Data:

	$\Delta S°$ (J K^{-1} mol^{-1})
$C_2H_5OH(l)$	161
$O_2(g)$	205.0
$CH_3COOH(l)$	160
$H_2O(l)$	69.96

Answer: