

Answer on Question #45924 – Chemistry – Physical Chemistry

Question:

Heat of formation of $C_2H_4 = 12.5$ Kcal

Heat of atomisation of C+ 171 Kcal

Heat of atomisation of H+ 52.1 Kcal

Bond energy of C-H = 99.3 Kcal

What is C=C bond energy?

Answer:

To find the energy of C=C bond we need to take 2 heat of atomization of C+, 4 heat of atomization of H+, 4 bond energy of C-H and 1 heat of formation of C_2H_4 .

$$2*171 + 4*52.1 - 4*99.3 - x = 12.5$$

Then $x = 140.7$ Kcal

Answer: 140.7 Kcal.