

CHEM 1 LEC C, Fall 2020

Video Submission Assignment 1 Problem

The amount of UVA radiation hitting a surface at sea level in a lightly clouded day is about 70 W/m^2 . About half of that can be absorbed by the skin. A typical carbon-carbon bond requires 348 kJ/mol to break. A person lies on the beach for about 1 hour without sunscreen (i.e. fully exposed to UVA radiation). Estimate the number of C-C bonds broken in this person's back (about 0.18 m^2) over that period. Assume that the average wavelength of UVA is 335 nm .