

E_{bond}

r



The graph illustrates the potential energy of a diatomic molecule as a function of the internuclear distance r . The vertical axis represents the bond energy E_{bond} , and the horizontal axis represents the distance r . The curve starts at a high energy value for small r , indicating strong repulsion between the nuclei. It then drops to a minimum value, which corresponds to the most stable configuration of the molecule. After the minimum, the curve rises and then levels off, approaching zero energy as r increases, indicating that the bond becomes increasingly weak and eventually breaks.