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# Bond Energy of Adsorbed and Interlayer Water: Kerolite Dehydration at Elevated Pressures

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**Abstract:** The dehydration reaction of kerolite was investigated using high-pressure differential thermal analysis at pressures as high as 600 bars. The peak associated with the dehydration is broad, suggesting the presence of a series of overlapping reactions ranging from the release of adsorbed water to interlayer water. The peak temperature is 136° C at 1.8 bars and increases to 516° C at 586 bars. The primary reaction represents loss of adsorbed water having a bond energy of  $1.5 \pm 1$  kJ/mole. A small amount of water may be present as interlayer water and has a bond energy of  $7.5 \pm 3$  kJ/mole.

**Key Words:** Bond energy • Dehydration • High-pressure differential thermal analysis • Kerolite • Water

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