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Chen, Kitaev, Mütze, and Sun recently introduced the notion of universal partial words, a generalization of universal words and de Bruijn sequences. Universal partial words allow for a wild-card character  $\diamond$ , which is a placeholder for any letter in the alphabet. We extend results from the original paper and develop additional proof techniques to study these objects. For non-binary alphabets, we show that universal partial words have periodic  $\diamond$  structure and are cyclic, and we give number-theoretic conditions on the existence of universal partial words. In addition, we provide an explicit construction for an infinite family of universal partial words over non-binary alphabets. (Received September 16, 2019)