Treatment of an unsymmetrical ketone with a base could result in two enolate ions. The more stable enolate ion is called the thermodynamic enolate and the faster forming one the kinetic enolate.

eg: Ketone 1, upon treatment with a base, could yield the enolate ions 2 and 3.

2 is more stable than 3 because the carbon-carbon double bond in 2b, the more stable resonance form of 2, is more stable than that in 3b, the more stable resonance form of 3. Thus, 2 is the thermodynamic enolate.

3 forms faster than 2 because in 1 the H1 atoms are more accessible to the base than the H2 atom, due to the fact that the H1 atoms are sterically less hindered than the H2 atom. Thus, 3 is the kinetic enolate.

see also thermodynamic control, kinetic control
Contributors

- Gamini Gunawardena from the OChemPal site (Utah Valley University)