

unstable

The opposite of stable, i.e. the chemical species concerned has a higher molar Gibbs energy than some assumed standard. The term should not be used in place of reactive or transient, although more reactive or transient species are frequently also more unstable. (Very unstable chemical species tend to undergo exothermic unimolecular decompositions. Variations in the structure of the related chemical species of this kind generally affect the energy of the transition states for these decompositions less than they affect the stability of the decomposing chemical species. Low stability may therefore parallel a relatively high rate of unimolecular decomposition.)

Source:

PAC, 1994, 66, 1077 (*Glossary of terms used in physical organic chemistry (IUPAC Recommendations 1994)*) on page 1175