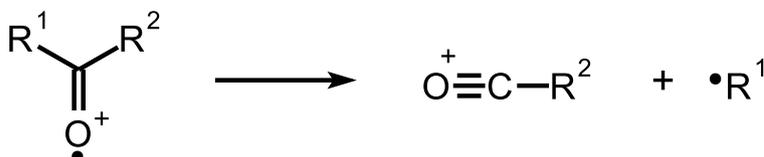


## $\alpha$ -cleavage (alpha-cleavage)

1. (*in mass spectrometry*) The fission of a bond originating at an atom which is adjacent to one assumed to bear the charge; the definition of  $\beta$ -,  $\gamma$ -, cleavage then follows automatically. The process:



would thus be described as  $\alpha$ -fission of a ketone with expulsion of a radical  $\text{R}^1\cdot$ . The carbon atoms of the radical  $\text{R}^1\cdot$  are called the  $\alpha$ -,  $\beta$ -,  $\gamma$ -carbons, starting with the atom nearest the functional group.

**Source:**

PAC, 1991, 63, 1541 (*Recommendations for nomenclature and symbolism for mass spectroscopy (including an appendix of terms used in vacuum technology). (Recommendations 1991)*) on page 1558

2. (*in photochemistry*) Homolytic cleavage of a bond connecting an atom or group to an *excited chromophore*. Often applied to a bond connected to a carbonyl group, in which case it is called a Norrish type I photoreaction.

Note:

This reaction should be distinguished from an alpha-( $\alpha$ -)elimination.

**Source:**

PAC, 2007, 79, 293 (*Glossary of terms used in photochemistry, 3rd edition (IUPAC Recommendations 2006)*) on page 302