

# How Exotic are Carbyne Radicals?

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## ABSTRACT

Unlike the ubiquitous carbon mono-radicals,  $R_3C$  or bi-radicals (carbenes),  $R_2C$ , carbynes,  $RC$ , are believed to be short-living and highly energetic exotic species.  $RC$  or mono-valent carbon, had been produced by high-energy processes such as pulse-radiolysis and others that also produced a mixture of other reactive species.

In 2005 we reported that tri-nuclear metal complexes with alkylidyne ligands decompose spontaneously in aqueous solution and produce alkynes. It was discovered later that the first stage in that reaction is the production of free carbyne radicals. The reactivity and chemistry of these energetic species will be discussed.