



PREPARATION OF FULLERENES

BY,

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Preparation and purification of C₆₀ and C₇₀

Kratschmer's methodology for preparation of fullerenes is the one widely used currently which has been modified by various workers to increase yields. It was Kroto again who separated C₆₀ and C₇₀ for the first time in pure forms. Graphite electrodes are evaporated in an atmosphere of ~ 100 torr of Helium (Kratschmer) or 50 -100 torr of Argon (Kroto) in a glass vessel (modified RB flask, Power from a transformer) . The soot formed is scrapped and dispersed in benzene whereupon a wine red solution is obtained. This is filtered from the insoluble solids and concentrated . This mixture of C₆₀ and C₇₀ is then run on an alumina column using hexane as eluant. The magenta colored C₆₀ elutes out first followed by the port wine colored C₇₀. In a typical case the ratio of C₆₀ to C₇₀ will be 5:1. Solid pure C₆₀ will be mustard colored [UV 596, 604, 625nm] and C₇₀ will be red [600, 617, 644 nm]. (laser vaporization of graphite and graphite doped with other elements and compounds such as lanthanide metals, boron nitride has also been used for synthesis of fullerenes)

