The title compound, As[C₆H₃(CF₃)₂]₃, has been synthesised by Grignard reaction from arsenic trichloride and 3,5-bis(trifluoromethyl)phenylmagnesium bromide. It crystallises in the triclinic space group P¯1 with two formula units in the asymmetric unit. The most prominent feature of the crystal structure is the protrusion of a phenyl group of one molecule into the cavity at the base of the pyramid of a second molecule. The crystal structure is then built up by densely packing these units of interlocked molecules to form columns, which are arranged in parallel in a distorted hexagonal pattern.

Key words: Triphenyl Arsine, Grignard Reaction, Arsenic, Trifluoromethyl Groups