The occurrence of benzene in soft drinks has been attributed to its formation from the reaction between benzoate salts and ascorbic acid, especially in the presence of light and high temperatures. This is of concern because benzene is considered to be a human carcinogen. Several countries have reported the occurrence of benzene in soft drinks while no data is available from Brazil. Therefore, the objective of this study was to conduct a preliminary survey on benzene levels in Brazilian soft drinks and other beverages. For that, 77 samples (59 sodas and 18 juices) were analyzed by using an in-house validated method based on gas chromatography coupled to mass spectrometry preceded by headspace solid phase micro-extraction (HS-SPME-GC/MS). The limits of detection and quantitation were 0.02 and 0.08 µg/kg, respectively. The contaminant was found in quantifiable amounts in 72 samples at levels up to 10.84 µg/kg, with most of the positive samples showing concentrations up to 1 µg/kg. Benzene above 5 µg/kg (maximum limit established for benzene in drinking water in Brazil) was found in a sample of guaraná diet and in two samples of concentrated peach juice. Data reported by other countries have shown similar results. Although the occurrence of benzene in soft drinks does not appear to be an immediate concern, it is important that the concentration of this contaminant in beverages containing benzoate salts and ascorbic acid be as low as reasonably achievable.