The effect of temperature on the polarized spectral emittance of SiC has been studied, using a measurement system based on a FT-IR spectrometer: the Infrared Spectral Emittance System (ISES) at the National Institute of Standards and Technology (NIST). The performance of this system has been validated via both intra-comparisons with reflectance measurements and an inter-comparison with other National Metrology Institutes (NMIs). The polarized spectral emittance of SiC in the wavelength range from 3 to 24 micrometers and at 350 °C, 400 °C, and 500 °C was measured. Spectral emittance measurements were made by comparison of the sample spectral radiance to that of a reference cesium heat-pipe blackbody at a similar temperature. A non-contact technique, that employs an integrating sphere and radiometer based reflectometer system, was used for sample temperature measurements. The SiC sample was measured at two angles: 8° and 45° to the normal surface. For the measurements, a polarizer was used to obtain s-polarization and p-polarization results. Those results were compared with the results obtained without a polarizer. The results are consistent with those obtained without a polarizer.