The Raman and infrared spectra (4000 to 50 cm$^{-1}$) of the gas, liquid or solution, and solid have been recorded of isopropylamine, (CH$_3$)$_2$CHNH$_2$. Variable temperature (-50 to -100°C) studies of the Raman spectra (3500 to 100 cm$^{-1}$) dissolved in liquid xenon have been carried out. From these data, both the trans and gauche conformers have been identified and their relative stability obtained. The enthalpy difference has been determined from 20 band pairs at 6 temperatures to be 113 +/- 11 cm$^{-1}$ (1.35 +/- 0.13 kJ mol$^{-1}$) with the trans conformer the more stable form. The percentage of the gauche conformer is estimated to be 54 +/- 1 percent at ambient temperature. The conformational stabilities have been predicted from ab initio calculations utilizing several different basis sets up to aug-cc-pVTZ from both MP2(full) and density functional theory calculations by the B3LYP method. By utilizing previously reported microwave rotational constants along with ab initio MP2(full)/6-311+G(d,p) predicted structural values, adjusted r$_0$ parameters have been obtained for the trans conformer. The determined heavy atom and NH$_2$ distances in angstroms are C-C = 1.530(3), C-N = 1.465(3), N-H = 1.019(3) and angles in degrees NCC = 108.9(5), CCC = 111.0(5), HNC = 110.3(5). The structural parameters for the gauche conformer were estimated by using the same adjustment differences to the gauche form as those obtained for the corresponding trans parameters. Vibrational assignments have been provided for the observed bands for both conformers which are supported by MP2(full)/6-31G(d) ab initio calculations to predict harmonic force constants, wavenumbers, infrared intensities, Raman activities and depolarization ratios for both conformers. The results are discussed and compared to the corresponding properties of some related molecules.