This investigation was undertaken to study the effects of iodine contrast agents on the P-32 bremsstrahlung spectrum and its imaging. P-32 phosphate liquid (Mallinckrodt Medical) was diluted to 10 μCi/ml with saline solution and varying quantities of iodine (900;600;300; 0 mg)were added to generate a total volume of 4 ml per vial. Two different chemical forms of iodine were tested, Renografin-60 and Omnipaque. Samples were created in triplicate and a well-type gamma counter was used to measure the bremsstrahlung energy spectra with 10 kev increments. In addition,500 μCi P32 solutions with and without iodine were prepared in phantoms and planar images at energies 80 kev and 127 kev with +-10% windows were acquired by a gamma camera. Compared with the pure P32 saline solution, bremsstrahlung spectra obtained with different amounts of added iodine showed an enhanced peak at about 20 kev, a decreased region from 30 to 70 kev and an enhanced region above 70 kev. Total counts from planar images at 80 and 127 kev increased 44% and 38% respectively with iodine compared to without. In addition to its utility as a visualization aide in CT imaging of cystic tumors treated with P-32, iodine can also be potentially useful in enhancing nuclear image quality of P32 bremsstrahlung.