

Since the strain rate applied to specimens using ultrasonic techniques is very high, the responses measured in this experiment were indications of the purely elastic behavior of dental amalgam.

The atmospheric pressure values of the bulk, shear and Young's moduli and of Poisson's ratio of the amalgam samples were obtained by back extrapolation from the high pressure measurements. It was observed that these values decreased with increasing mercury content, and large decreases in the values of elastic constants were measured in samples containing porosity.

The elastic constants of amalgam exhibit linear increases with increasing pressure, however, some ultrasonic data indicated the possibility of changes of the slopes of the elastic constants versus pressure.