

OPTICAL STUDIES AT HIGH PRESSURE

by

H.G. Drickamer
Department of Chemistry and Chemical Engineering
University of Illinois, Urbana, Illinois

The purpose of this paper is to enumerate the salient features of the high-pressure optical cells developed at the University of Illinois and to mention briefly a few of the types of studies practical with the apparatus.

The room temperature optical apparatus has been thoroughly described elsewhere.⁽¹⁾ There are two cells, one useful to 55,000 atmospheres (Fig. 1), the other with a range occasionally exceeding 200,000 atm (Fig. 2), but with a less direct pressure calibration. Each cell involves an outer jacket of AISI 4340 or 6150 steel hardened to 42 Rockwell C, an insert of Solar or Labelle HT tool steel hardened to 59-60 Rockwell C, and jacketed carboloy pistons. In each case the pressure transmitting "fluid" is

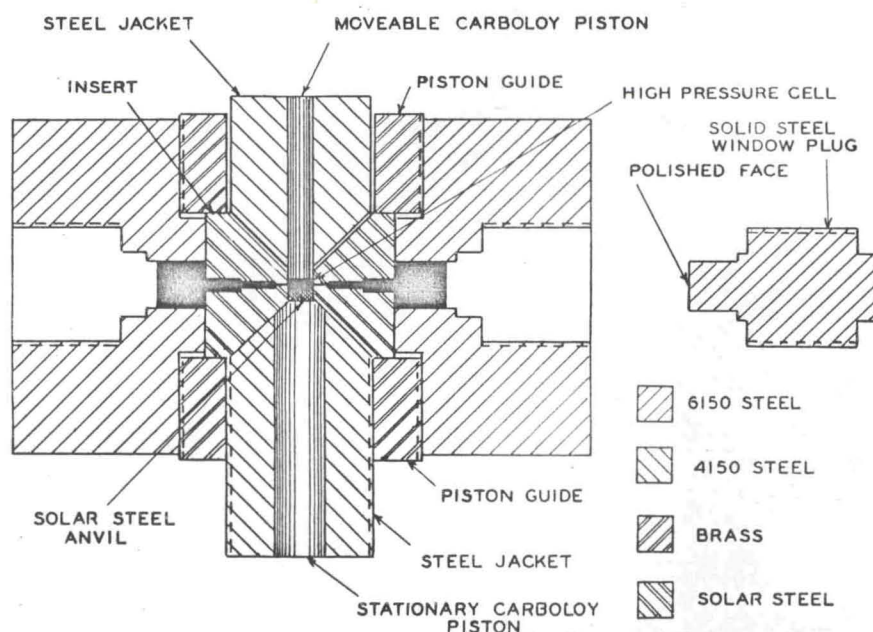


Fig. 1 Diagram of 0-53,000 atm pressure cell.