FACILITY LOCATION  Hampton, Virginia 23665
FACILITY NUMBER  1275
FACILITY NAME  Chemical Kinetic Shock Tube
FUNCTIONAL NAME  Chemical Kinetic Shock Tube
TECHNOLOGICAL AREAS  High-temperature chemical kinetics research, pollution research

INITIAL COST  $ 75 K  YR. BUILT  1966  STATUS CODE  Active
ACCUM. COST  $ 100 K  NASA B.O.D.  1966  OWNER CODE  NASA
LIFE EXPECT.  Indef.  OPER. CODE  NASA

CONTRACTOR NAME
(if contr. oper.)

POTENTIAL

PLANS

OTHER INFO SOURCES

COGNIZANT ORG. COMPONENT  Space Systems Division

LOCAL CONTACT FOR FURTHER INFO  Chief, Research Facilities Engineering Division, Code 56.000; (804) 827-3171

January 1974
DESCRIPTION

This shock tube is used for high-temperature chemical kinetic studies of gas phase reactions. The tube is constructed of stainless steel and has a 3.5-in. inside diameter. The tube is composed of a 19-ft-long test section, a 4-ft-long buffer section, and a 3-ft-long driver section. The test medium is usually argon with a small percentage of the reactant gas mixture. The driver and buffer gases are helium or helium-nitrogen mixtures. The shock tube is capable of producing temperatures up to about 4000°K with the incident shock in argon and pressures up to about 45 psi. Test conditions can be varied by using diaphragms of different thicknesses or different initial test gas pressures, and by varying the molecular weight of the driver and buffer gases.