

# National Bureau of Standards

## Certificate

### Standard Reference Material 1006b

#### Smoke Density Chamber Standard

#### Non-flaming Exposure Condition

This Standard Reference Material consists of sheets of cotton-linter paper (principally  $\alpha$ -cellulose). It is intended primarily for checking the operation of smoke-density chambers under non-flaming exposure conditions. However, it does not obviate the need for following the prescribed calibration and standardization techniques outlined in the ASTM Standard Test Procedure, E662-82.

The certified value for maximum specific optical density is:

$$D_m = 186 \pm 25 *$$

$$D_m (\text{corr.}) = 183 \pm 25$$

These mean values are the result of 47 tests on representative samples of a lot 0.030 inch (0.76 mm) thick cotton-linter paper (principally  $\alpha$ -cellulose). The indicated imprecisions are expressed as two standard deviations. These imprecisions are for a single measurement and include both sample and measurement variability. Smoke density measurements were made under non-flaming exposure conditions in accordance with the detailed procedure presented in American Society for Testing and Materials (ASTM) Standard E662-82, "Test Method for Specific Optical Density of Smoke Generated by Solid Materials," and in National Fire Protection Association (NFPA) 258-1982, "Standard Research Test Method for Determining Smoke Generation of Solid Materials."

NOTE: Prior to test, the material must be dried for 24 hours at 60 °C and then conditioned to equilibrium at 23 ± 3 °C and 50 ± 5 percent relative humidity.

Engineering testing and statistical analysis leading to the certification of this Standard Reference Material were performed by J.R. Lawson and W.H. Twilley of the Center for Fire Research, National Engineering Laboratory. Tests were conducted in a commercially available smoke density chamber.

Additional statistical consultation in the development of this SRM was provided by R.C. Paule, National Measurement Laboratory.

The support aspects involved in the certification and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by R.W. Seward.

\*Without correction for window deposit.