

National Bureau of Standards Certificate of Analysis Standard Reference Material 1667

Propane in Air (Mobile-Source Emission Gas Standard)

This Standard Reference Material is intended for use in the calibration of instruments used for the analysis of hydrocarbon in mobile-source emissions. It is not intended as a daily working standard, but rather as a primary standard to which the concentration of the daily working standards may be related.

Cylinder number:

Propane concentration: parts per million by volume

The concentration of propane is relative to all other constituents of the gas.

Each cylinder of gas is individually certified, and the analysis given on this certificate applies only to the cylinder identified on this certificate. The inaccuracy of the analysis is estimated to be within a coefficient of variation of one percent. This estimate is based on the 95 percent confidence interval of the mean of the individual analyses and allowances for known sources of possible error.

The propane in air mixtures were prepared by the Linde Division, Union Carbide Corporation, East Brunswick, N. J.

Chemical analyses leading to the certification of this Standard Reference Material were performed by E. E. Hughes and W. P. Schmidt.

The overall direction and coordination of the technical measurements leading to certification were performed under the chairmanship of E. E. Hughes and J. K. Taylor.

The technical and support aspects involved in the preparation, certification, and issuance of this Standard Reference Material were coordinated through the Office of Standard Reference Materials by T. W. Mears.

Washington, D. C. 20234
April 5, 1973

J. Paul Cali, Chief
Office of Standard Reference Materials

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Analysis

Propane in this Standard Reference Material was determined by comparison with a secondary standard that had been previously intercompared with a set of gravimetric primary standards. The imprecision of intercomparison is less than 0.3 percent of the concentration of the propane. The method of intercomparison was gas chromatography using a flame ionization detector. The limits of inaccuracy represent the uncertainty in the concentration of propane in the primary gravimetric standards.

Stability

The stability of these mixtures is considered to be excellent. No loss of propane has been observed in either the standards or the Standard Reference Material. Periodic reanalyses of representative samples from this batch will be performed, and if any change in concentration is observed the purchasers of other samples from this batch will be notified.