



Designation: D 1145 - 80

Standard Method of SAMPLING NATURAL GAS¹

This standard is issued under the fixed designation D 1145; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval.

1. Scope

1.1 This method of sampling covers the procedures for the sampling of natural gas, containing different gases as contaminants such as: (1) natural gases containing primarily hydrocarbons and nitrogen, (2) natural gases containing hydrogen sulfide, or organic sulfur compounds, or other sulfur contaminants, (3) natural gas containing carbon dioxide, (4) natural gas containing gasoline and condensables. These are treated separately and special precautions stated when necessary. The differences in procedures are mainly in degree, rather than in kind.

1.2 This method of sampling is intended to correlate the size or type of sample with the analysis to be run subsequently on that sample.

1.3 The values stated in inch-pound units are to be regarded as the standard.

2. General Considerations

2.1 In collecting samples of natural gas, consideration must be given to the purposes for which the samples are to be used and the conditions under which they must be secured. Consideration must also be given to the volume of sample required for the purpose intended; to the size, design, and material of containers; and to the size, length, and material of which the sampling line and auxiliary equipment are constructed to convey gas from the source of supply into the container and subsequently from the container to the point of use. Account must be taken of the possible constituents in the gas, whether it may contain only hydrocarbons and inert gases such as nitrogen and carbon dioxide or whether hydrogen sulfide, organic mercaptans, or other sulfur contaminants may be present. The object is to obtain a representative gas

sample because any subsequent analysis, regardless of the care and accuracy in making any such analytical test, is useless unless a representative sample has been obtained.

3. Usual Sources of Samples

3.1 Samples of natural gases for test purposes may be required from one or more of the following sources: gas wells, field gathering lines, before and after field processing plant, main transmission trunk pipe line, city distribution system, storage holders, or similar piping, processing, or storage systems. The gas may exist under pressure as high as 9000 to 10 000 psi (62 000 to 69 000 kPa), as in some gas wells, or under subatmospheric pressure in others; in transmission lines from 50 to 1200 psi (345 to 8300 kPa); from 3 in. (7.6 cm) of water column pressure to 100 psi (0.7 to 700 kPa) in city distribution systems. When taking samples under such widely varying conditions special precautions should be observed, to make sure that the particular technique most suitable for the situation is employed.

4. Volume of Sample Required

4.1 Volume of sample required depends both upon the analyses to be made and the apparatus to be used. In general, the following minimum volumes of samples, including volume needed for purging the apparatus, are recommended. These quantities will normally suffice for two tests, an original and a check.

¹ This method is under the jurisdiction of ASTM Committee D-3 on Gaseous Fuels, and is the direct responsibility of Subcommittee D03.01 on Collection and Measurement of Gaseous Samples.

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