
**EMISSION MEASUREMENT TECHNICAL INFORMATION CENTER
GUIDELINE DOCUMENT**

ALTERNATIVE FOR ANALYZING CALIBRATION GAS CYLINDERS

INTRODUCTION

A manufacturer's or vendor's calibration gas cylinder that is used for calibrations of continuous emission monitoring systems (CEMS) may be suspected of being outside the guaranteed limits of the tag value. There are two options to correcting this situation that may be chosen. The first is to ask the vendor to replace the cylinder with one with a correct value. The second is to analyze the cylinder with an EPA instrumental method or a CEMS calibrated with a protocol gas to determine an alternative or appropriate concentration value for the cylinder. This second option is the topic of this alternative.

The EMTIC recommends that this alternative is applicable for determining the values of gases greater than 100 ppm tag value used for daily calibrations of CEMS where protocol gases are not required by rule, permit, performance specification, or quality assurance procedures.

Alternative

1. The gas analyzer is the same as specified for the applicable reference method (e.g., 3A, 6C, 7E, etc.) used for the performance specification testing of the CEMS or the applicable CEMS that has been calibrated as defined in the applicable requirements using a protocol gas.
2. The gas analyzer or CEMS and associated sample transport or manifold system must have passed all applicable measurement system performance test procedures as defined by the applicable reference method or performance specification.
3. The criteria and procedure for acceptance of the alternative value are as follows: Analyze the gas three times. Each of the individual results shall be within 5 percent of the triplicate set average; otherwise, discard the entire set, and repeat the triplicate analyses. If the average of the triplicate analyses is within 5 percent of the calibration gas manufacturer's cylinder tag value, use the tag value; otherwise, conduct at least three additional analyses until the results of six consecutive runs agree within 5 percent of their average. Then use this average for the alternative cylinder value if the six-run average is within 15 percent of the manufacturer's cylinder tag value. If the measured value of a gas cylinder is 15 percent different from the manufacturer's tag value, the cylinder should not be used for daily calibrations.