MERCAL™

Mercury Calibration System for CEMS

The patented MerCal™ is designed to provide a stable source of oxidized mercury, Hg^{+2}, as well as, elemental mercury, Hg^{0}, to allow complete calibration of mercury continuous emissions monitoring systems (CEMS). Most mercury analyzers measure only Hg^{0} and incorporate a converter to reduce the oxidized form to the elemental state. Hg^{+2} is required to allow the converter's efficiency to be checked on a regular basis.

MerCal™ eliminates the need for complicated liquid standards and the potential for producing secondary environmental problems

In operation a high pressure source of NIST traceable elemental mercury and a high pressure source of chlorine are reacted in the stack mounted MerCal™. Mercury flow is set by the user's mercury protocol gas regulator to match the continuous emissions monitoring system requirements. MerCal™ incorporates a flow restrictor to establish a few cc/min chlorine flow, thus eliminating the need to correct the concentration of the Hg^{0} when it is reacted to $HgCl_2$

The CEMS controller automatically initiates flow of either the Hg^{0}, or the Hg^{0} and Cl_2. In the Hg^{0} only mode, the outlet of the MerCal™ unit will be elemental mercury which can be used to check the calibration and drift of the CEMS. In the Hg^{0} and Cl_2 mode the outlet of the MerCal™ will be $HgCl_2$ which will allow for the monitoring of the efficiency of the Hg^{+2} to Hg^{0} converter in the CEMS.

MerCal™ is engineered to be maintenance free. The replacement of the mercury will be determined by the frequency and the length of calibration cycles. The replacement of the chlorine cylinder will be much less frequent and in normal operation it is estimated to be over two years.

Spectra Gases Inc.

Branchburg, New Jersey 08876 USA. tel: 1.908.252.9300. toll free: (US & Canada) 1.800.932.0624. *www.spectragases.com*