



## Special Calibration Considerations: **Hydrogen Chloride (PN° 823-0208-41)**

### Zeroing The Sensor

It is recommended that this sensor be zeroed in clean ambient air. If dry or bottled air is used, a 5 minute pre-zero exposure is recommended to allow moisture transients to minimize. Complete zeroing instructions are provided in the SensAlert<sup>Plus</sup> User Manual or SensAlert ASI User Manual.

### Span Calibration

It is recommended that this sensor be calibrated at the half-scale concentration of 50 ppm HCl. It is recommended that the sensor undergo a 2 minute pre-calibration exposure in order to season the calibration system. This pre-exposure ensures that the gas reaches the sensor at full concentration. The use of Teflon™ tubing is recommended with this gas to prevent gas absorption into the tubing walls. Complete span calibration instructions are provided in the SensAlert<sup>Plus</sup> User Manual or SensAlert ASI User Manual.

### Test-on-Demand Cell

Test-On-Demand cell available for this sensor: 821-0204-06 (Type S).

## Moisture Considerations

HCl gas can be absorbed by ambient moisture, especially under precipitation conditions. However, the sensor will detect those HCl molecules that reach it. HCl will be adsorbed or absorbed onto the moisture layer present in unseasoned gas delivery systems. For this reason, a pre-exposure is recommended prior to calibration of the sensor. In addition:

- *The use of this sensor in sample draw systems is not recommended, nor is the use of the SensAlert<sup>Plus</sup> Moisture Barrier or Rainshield.*

This sensor will undergo an approximate -1 ppm output transient on the application of dry air or gas and a +1 ppm transient on application of moist air. These transients fall to near zero within 2 minutes and are within the zero suppression of the sensor – they should not present a problem in normal usage as long as pre-exposures are utilized during zero and span calibrations.

### **Bias Voltage Considerations**

The sensor operates with a +300 mV bias voltage between the sensing and reference electrodes. The sensors are shipped, and should be stored on, battery bias boards in order to shorten the warm-up time. The battery bias boards have a useful life expectancy of 6 months. In addition, loss of power to a transmitter using this sensor will result in a loss of the bias voltage. Once re-powered, the sensor will have a high (up to full scale) output until the sensor re-equilibrates under bias. This equilibration can take from 15 minutes to several hours. *This loss of power effect must be taken into considerations in applications using this sensor.*