

Instructions for Cross-Sensitivity in Electrochemical Sensors

Cross-sensitivity, also called cross-interference, is a gas sensor's reaction to gases other than the target gas. It is a common phenomenon that occurs and causes the gas sensor to show a reading. All SemeaTech Electrochemical (EC) gas sensor datasheets contain cross-sensitivity data with the coefficients of the common gases. These data should be used to understand approximately how much those cross-interfering gases can affect the accuracy of the sensor reading. It is important that sensors are not calibrated by using any of those cross-interfering gases. Here are the reasons:

1. The cross-sensitivity coefficients shown in the sensor datasheet can be different from batch to batch of the sensors manufactured in the same production.
2. There are no data to support the long-term consistency of the cross-sensitivity coefficients because the catalysts on the sensor electrodes are not designed for such cross-interfering gases.
3. The cross-interference gases may damage, poison or degrade the sensor electrodes.
4. The sensor output to the cross-interfering gases may not be linear, which causes inaccurate readings.
5. The cross-sensitivity coefficients come from the average value of a certain number of sensors tested.

Therefore, the coefficient of cross-interference is only referential, not substitutive.