Avoid Damage to pH/ORP Electrodes in Freezing Weather

During the winter months, product shipments can sit in trucks in below zero weather. If you plan on ordering pH or ORP electrodes or suspect your delivery could be in one of these trucks, the electrodes may reach cold temperatures and freeze during these cold winter months if not remaining at proper storage temperatures. For this reason, we suggest the following:

1. Request overnight shipments for orders with pH or ORP electrodes.
2. Store sensors in temperatures above 0°C (32°F).

What can you do if the electrodes have been exposed to cold temperatures?

It is highly recommended to perform a visual inspection of electrodes you suspect have been exposed to cold temperatures. Symptoms of frozen electrodes you can inspect for include:

1. Shattered or cracked glass:
   - The pH glass portion which is exposed can be inspected visually. The pH glass membrane can be inspected using a magnifying glass to detect small hairline cracks.
   - pH and ORP electrodes contain a glass stem on the inside portion of the electrode body which is unseen. The electrode should be tested with a preamplifier and instrument. Install the electrode into a preamplifier, using pH buffer solutions, verify the sensors (electrode + preamplifier) pH values change on the instruments display. A sensor that does not change its pH value in buffers is a good indicator the internal seal has been damaged. In this case, the reading will either be offset or remain at a constant value no matter which pH or ORP buffer it is placed in.

2. Reference junction protrusion:
   - The white reference junction has been known to move out of the electrode due to the expansion of the reference electrolyte solution.

3. Cracked sensor body:
   - It is highly unlikely, however, in extreme cold weather, the plastic electrode body may show signs of stress cracking.

What happens if problems are found with the new electrodes?

Signet pH and ORP electrodes are not covered under warranty if they have been found to be damaged by cold weather. Since weather conditions vary worldwide, it is recommended you contact Customer Service for special overnight shipping instructions when you are aware of extreme cold conditions in your local region.