

Preparation and Conditioning of Probes for Negative ORP Readings

ORP meters will read positive ORP solution right out of the box with little or no preparation. These meters are used in food preparation, wastewater treatment facilities, water quality testing for industrial applications and many other uses where only a positive (+mv) ORP is expected and needed.

When a negative (-mv) ORP reading is desired this usually applies to a medical water quality environment created by machine. The Super negative readings generated by these machines are below -50 and can go as low as negative 1000mv. To effectively read a negative ORP state of water the platinum probe used in most ORP meters must be in an unnatural condition, which is oxidized.

Platinum does not oxidize easily. This is the reason platinum is used in jewelry and many types of industrial electronic applications. Originally, this oxidation process was accomplished by letting the probe sit in very acidic water (2.5 pH or lower) for 5 to 7 days however, this proved to be an inconsistent method to oxidize a probe. In many cases the probes did not get a consistent and complete coding of oxidation and this contributed to inconsistent readings. This problem has been corrected by the use of a conditioning and oxidation kit Milwaukee Instruments model number MA9025.

This kit has two 2oz bottles solutions and requires about 45 minutes to perform the oxidation procedure. This procedure is covered in detail in the instructions that come with the kit. After oxidation of the probe it is mandatory that the probe be put in white distilled vinegar and stored in this very acidic liquid all the time to retain the oxidation coating on the probe. Never let the probe dry out or set for an extended time in solution that is above 2.5pH. In addition, it will be necessary to re-oxidize probe about every 30 days so you want to retain the liquid in the kit to be reused. The oxidation of the probe does not affect the performance of the probe for reading positive ORP solutions in any way.

All ORP probes used in this manner will need to be replaced about every 10 to 12 months due to the corrosion of the platinum on the probe diode.