# ORP Composite Electrode Manual

## 1. Introduction

ORP (Oxidation Reduction Potential) composite electrode is made up of gold or platinum electrode and reference electrode. It is used to measure the oxidation reduction potential of the solution.

## 2. Main Characteristics

In the ORP standard solution, the millivolt value is about 222±15mV(25℃).

## 3. Test the Electrode in the ORP Standard Solution

Let the ORP electrode connected to a pH/mV meter, and set the electronic unit on the mV measurement.

Immerse the ORP composite electrode in the standard solution, stirring it period of time, and then place it statically. You can only read the value after the reading is stable.

## 4. Use and Maintenance

1) When use the ORP electrode, the calibration is not necessary. It can be directly connected to the instrument. Only when you doubt the quality or the test results, you can use a standard solution to test the mV value, as a method of distinguishing electrode quality.
2) There are reasonable electrode soaking solutions in the bottle, the insert electrode tip is soaking in it. Before measurement, unscrew the cap and pull out the electrode, use the pure water to clean the electrode and dry it before use. Please do not rub the surface of the sensitive elements. Before measurement, the electrode should be put in the solution and stirred, in order to acceleration response. After measurement, the electrode should be washed in the pure water, pulled into the bottle and screw the cap, in order to prevent the leakage. You should exchange the solution when it is Turbid or moldy.
3) The configuration of the electrode soaking solution:
   Take a packet of buffer whose pH value is 4.00, dissolved it in 250mL water. Then add 56g muriate of potash (analytically pure) in together, then heating and stirring them until completely dissolved.
4) Cleaning and activation of the ORP electrode:
   After a long-term use, the pollution on the sensitive elements will lead to the inaccurate measurement and the slow response. You can clean and activate the electrode as follows:
   a) For inorganic pollution, put the electrode into 0.1mol / L dilute hydrochloric acid for about 30 minutes, then clean it with pure water. After the cleaning, put it in the electrode soaking solution for about 6 hours.

b) For organic oil or oil film pollution, you can wash the sensitive elements with the detergent, and then wash it cleanlily with the pure water. After the cleaning, put it in the electrode soaking solution for about 6 hours.

c) When the pollution on the sensitive elements is serious, forming an oxide or reduction membrane on the surface, the finer metallographic sandpaper is appropriately used to polish the surface of the sensitive elements. After the polish, put the electrode in the electrode soaking solution for about 6 hours.

## 5. Temperature Coefficient of the ORP Standard Solution(For reference only.)

| ℃ | mV | ℃ | mV | ℃ | mV | ℃ | mV |
|---|---|---|---|---|---|---|---|
| 10 | 242 | 15 | 235 | 20 | 227 | 25 | 222 |
| 30 | 215 | 35 | 209 | 40 | 201 | | |

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