

# ISE Solutions

Solutions Designed for our ISE Electrodes



## HANNA ISE Standards

Our wide selection of HANNA ISE Standards are made and bottled in our own state-of-the-art solutions facility. ISE Standards are required for direct and incremental measurement techniques and are available with Certificate of Analysis.

| CODE       | DESCRIPTION   | SIZE   |
|------------|---|--------|
| HI 4001-01 | 0.1 M ammonia std.                                    | 500 mL |
| HI 4001-02 | 100 ppm ammonia std. (as N)                           | 500 mL |
| HI 4001-03 | 1000 ppm ammonia std. (as N)                          | 500 mL |
| HI 4002-01 | 0.1 M bromide std.                                    | 500 mL |
| HI 4003-01 | 0.1 M cadmium std.                                    | 500 mL |
| HI 4004-01 | 0.1 M calcium std.                                    | 500 mL |
| HI 4005-01 | 0.1 M carbon dioxide std.                             | 500 mL |
| HI 4005-03 | 1000 ppm carbon dioxide std. (as CaCO <sub>3</sub> )  | 500 mL |
| HI 4007-01 | 0.1 M chloride std.                                   | 500 mL |
| HI 4007-02 | 100 ppm chloride std.                                 | 500 mL |
| HI 4007-03 | 1000 ppm chloride std.                                | 500 mL |
| HI 4008-01 | 0.1 M cupric std.                                     | 500 mL |
| HI 4010-01 | 0.1 M fluoride std.                                   | 500 mL |
| HI 4010-02 | 100 ppm fluoride std.                                 | 500 mL |
| HI 4010-03 | 1000 ppm fluoride std.                                | 500 mL |
| HI 4010-10 | 10 ppm fluoride std. premixed with TISAB II           | 500 mL |
| HI 4010-11 | 1 ppm fluoride std. premixed with TISAB II            | 500 mL |
| HI 4010-12 | 2 ppm fluoride std. premixed with TISAB II            | 500 mL |
| HI 4010-30 | (4) 1 ppm, (4) 10 ppm fluoride std. with (4) TISAB II | 500 mL |
| HI 4011-01 | 0.1 M iodide std.                                     | 500 mL |
| HI 4012-01 | 0.1 M lead std.                                       | 500 mL |
| HI 4012-21 | 0.1 M sulfate std.                                    | 500 mL |
| HI 4013-01 | 0.1 M nitrate std.                                    | 500 mL |
| HI 4013-02 | 100 ppm nitrate std.                                  | 500 mL |
| HI 4013-03 | 1000 ppm nitrate std.                                 | 500 mL |
| HI 4014-01 | 0.1 M potassium std.                                  | 500 mL |
| HI 4015-01 | 0.1 M silver std.                                     | 500 mL |

## HANNA Gas Sensor Fill Solutions

| CODE       | DESCRIPTION                     | SIZE              |
|------------|---------------------------------|-------------------|
| HI 4001-40 | Ammonia filling solution        | (4) 30 mL bottles |
| HI 4005-40 | Carbon dioxide filling solution | (4) 30 mL bottles |

## Specific "Solutions" for ISE Sensors

| CODE       | DESCRIPTION  | SIZE                          |
|------------|--|-------------------------------|
| HI 4000-47 | pH 4 and pH 7 buffers with chloride background. Used to check glass internal of gas sensors. | 10 packages ea. and 2 beakers |
| HI 4001-45 | Conditioning solution for HI 4101  | 500 mL                        |
| HI 4004-45 | Conditioning Solution for calcium electrodes   | 500 mL                        |
| HI 4005-45 | Conditioning Solution for HI 4105  | 500 mL                        |





## Ionic Strength Adjusters (ISA)

HANNA Ionic Strength Adjusters (ISA) are formulated to provide a constant ionic strength in sample and standards alike, thus permitting concentration rather than activity measurements to be made. In some cases ISA's adjust pH and eliminate matrix effects.

| CODE       | DESCRIPTION                          | SIZE                        |
|------------|--------------------------------------|-----------------------------|
| HI 4000-00 | ISA for halide electrodes            | 500 mL                      |
| HI 4001-00 | Alkaline ISA for ammonia/cyanide     | 500 mL                      |
| HI 4004-00 | Calcium ISA                          | 500 mL                      |
| HI 4005-00 | Carbon dioxide ISA                   | 500mL                       |
| HI 4010-00 | TISAB II (for fluoride)              | 500 mL                      |
| HI 4010-05 | TISAB II (for fluoride)              | 1 gallon                    |
| HI 4010-06 | TISAB III concentrate (for fluoride) | 500 mL                      |
| HI 4012-00 | Lead or sulfate ISA                  | 500 mL                      |
| HI 4013-00 | Nitrate ISA                          | 500 mL                      |
| HI 4013-06 | Nitrate interferent suppressant ISA  | 500 mL                      |
| HI 4014-00 | Potassium ISA                        | 500 mL                      |
| HI 4015-00 | SAOB (sulfide antioxidant buffer)    | 500 mL, 1pkg (2 components) |

## HANNA Accessories

HANNA replacement parts and accessories keep your measurements fast and accurate.

| CODE       | DESCRIPTION   |
|------------|---|
| HI 4000-50 | Liquid membrane sensor handle                       |
| HI 4000-51 | Gas sensor replacement pH for Ammonia Sensor        |
| HI 4000-52 | Gas sensor membrane cap for Ammonia                 |
| HI 4000-54 | Gas sensor replacement pH for Carbon Dioxide Sensor |
| HI 4000-70 | Halide polishing strip                              |
| HI 4001-51 | Ammonia membrane kit (20 loose)                     |
| HI 4004-51 | Calcium module for half-cell                        |
| HI 4104-51 | Calcium module for combination                      |
| HI 4005-53 | Carbon dioxide membrane kit (3 caps)                |
| HI 4110-51 | Fluoride module for combination electrode           |
| HI 4013-53 | Nitrate module 3 pack for half-cell                 |
| HI 4113-53 | Nitrate module 3 pack for combination               |
| HI 4014-51 | Potassium module for half-cell                      |
| HI 4114-51 | Potassium module for combination                    |
| HI 740155P | Capillary pipettes (20 pcs)                         |
| HI 740159  | Plastic tweezers                                    |

## HANNA Silver-free Reference Fill Solutions

Recommended for our Combination ISE Electrodes and the HANNA HI 5315 reference electrode. Reference electrodes should be topped off daily with the correct filling solution for optimum measurement performance. These solutions are silver free to eliminate silver precipitates found with standard electrolytes.

| CODE    | DESCRIPTION   | SIZE              |
|---------|---|-------------------|
| HI 7072 | Electrolyte solution, 1 M KNO <sub>3</sub>                            | (4) 30 mL bottles |
| HI 7075 | Electrolyte solution with KNO <sub>3</sub> and KCl                    | (4) 30 mL bottles |
| HI 7076 | Electrolyte solution, 1 M NaCl  | (4) 30 mL bottles |
| HI 7078 | Electrolyte solution, (NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub> | (4) 30 mL bottles |
| HI 7082 | Electrolyte solution, 3.5 M KCl                                       | (4) 30 mL bottles |